7 Troubleshooting

Chapter contents

Troubleshooting Process

The troubleshooting process is a systematic approach that addresses the major problems first and then other problems as you identify the causes for printer malfunctions and errors. If you know the cause of a problem in the printer system, go directly to that area. Otherwise, use the troubleshooting process diagrams starting on the next page. The diagrams illustrate the major steps for troubleshooting the printing system. In the diagrams starting on page 577, each heading depicts a major troubleshooting step. A **YES** answer to the questions allows you to proceed to the next major step.

A **NO** answer indicates that additional testing is needed. Proceed to the referenced location and follow the directions for that area. After completing the additional testing, proceed to the next major step.

To avoid replacing parts that are not broken, use figure 7-1 below to isolate the problem.
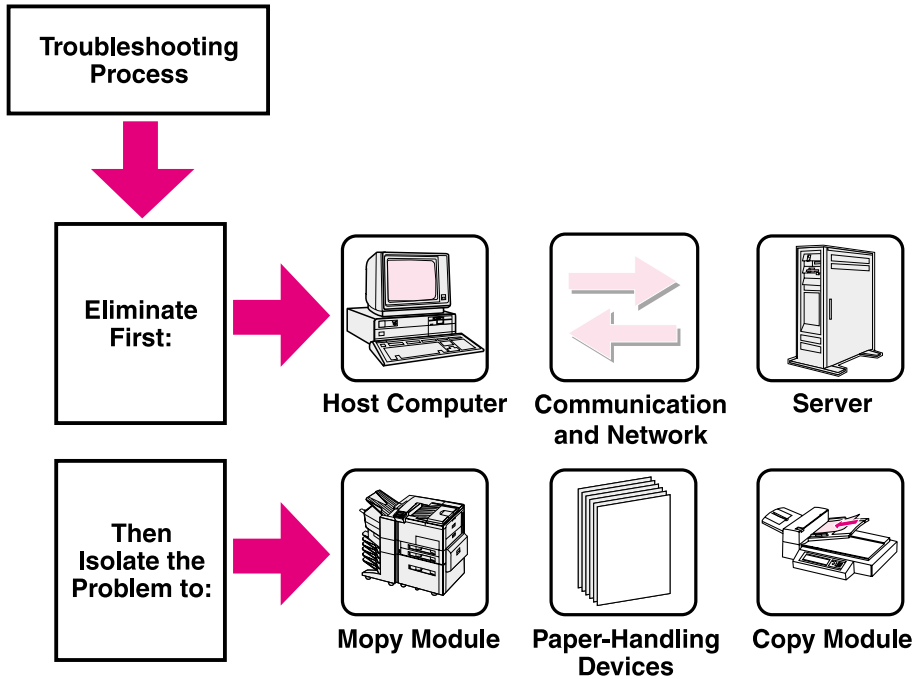
Figure 7-1   Troubleshooting Process

See the flowcharts on the following pages for each of the components of the troubleshooting process:

- Printer System Troubleshooting Process (page 577)
- Printer/Paper-Handling Troubleshooting Process (page 578)
- Copy Module Troubleshooting Process (page 580)

Printer System Troubleshooting Process

Figure 7-2   **Print System Troubleshooting Process**

1   Printer/Paper-Handling Troubleshooting Process (page 578)

2   Copy Module Troubleshooting Process (page 580)

Printer/Paper-Handling Troubleshooting Process
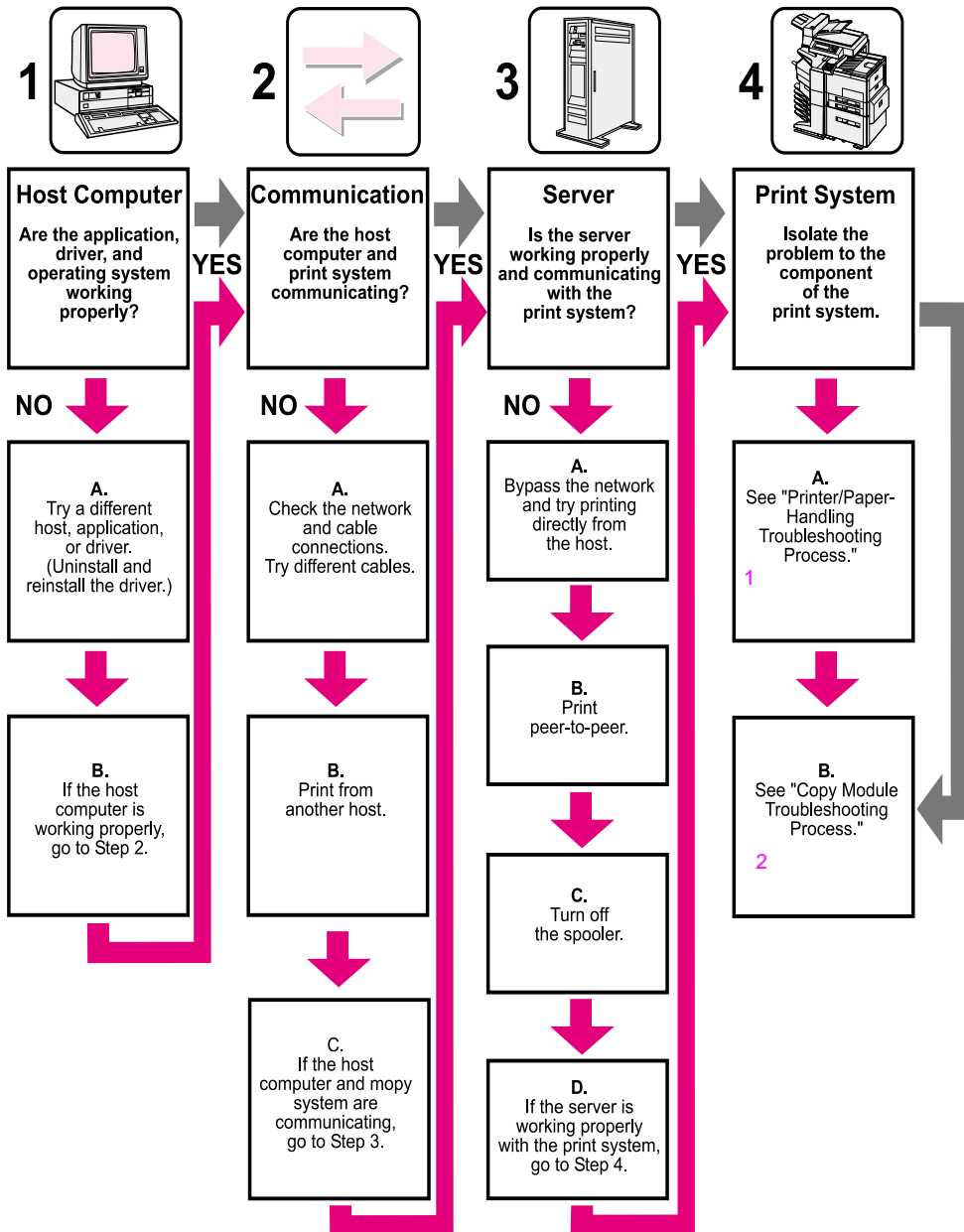
1

Power On

Is the printer on and displaying a readable message?

YES

NO

A.
Perform
Power-On checks.
1

B.
If control panel
display is
functional,
go to Step 2.

2

Display

Does display indicate any of the following?
READY
OFFLINE
POWERSAVE ON

YES

NO

A.
Show Event Log
to display
information
on current error
and correct it.
2

B.
After correcting all
messages and
errors,
go to Step 3.

3

Printer Messages/ Event Log

Have you evaluated control panel messages and the Event Log?

YES

NO

A.
For paper jams
encountered
during attempts to
print Event Log,
see Step 4.

B.
Print and evaluate
the Event Log.
2

C.
After evaluating
the Event Log,
go to Step 4.

Figure 7-3 **Printer and Paper-Handling Troubleshooting Process (1 of 2)**

4

Paper Path

Do problems occur in the mopy engine or paper-handling devices?

YES →

A.
Isolate the problem to the engine, input device, output device, or finisher. See the paper path troubleshooting sections in this chapter. 3

NO ↓

B.
If paper is moving through the mopy engine and paper-handling devices, go to Step 5.

5

Information Pages

Will it print a configuration page?

YES →

NO ↓

A.
Show Event Log to display information on the current error and correct it. 2

B.
Verify information on the Configuration Page.

C.
After verifying Configuration Page, go to Step 6.

6

Image Quality

Does the print quality meet customer requirements?

NO ↓

A.
Compare Configuration Pages to samples.

B.
Perform corrective actions. 4

END

Figure 7-4   Printer and Paper-Handling Troubleshooting Process (2 of 2)

1. Power On (page 594)
2. Event Log Pages (page 598)

3. Paper Path Troubleshooting (page 645)
4. Image Quality (page 661)

Copy Module Troubleshooting Process

1

Power On

Is the copy module and printer on and displaying anything on the front panel?
1

YES →

NO ↓

A.
Perform
Power-On Checks.

↓

B.
If the front panel functions,
go to Step 2.

2

Display and Communication
Does the Copy Module display a message?
2

YES →

NO ↓

A.
Does the back light come on, but the LCD remains blank?

↓

Perform checks.

↓

B.
Does a logo or icon display and then stop?

↓

Perform checks.

↓

C.
If READY TO COPY or an error message displays, go to Step 3.

3

Error Messages/ Problems
Have you resolved error messages and problems?
3

YES →

NO ↓

A.
Does the Copy Module report any errors on the front panel? And/or does the printer's error log report any Copy Module errors?

↓

B.
See the error message tables in this chapter.

↓

C.
If error messages have been resolved, go to Step 4.

Figure 7-5   Copy Module Troubleshooting Process (1 of 2)

1. Power On (page 718)   3. Error Messages and Problems (page 720)
2. Display and Communication (page 719)

4

Information Pages

Have you printed and verified information on the configuration pages? 4

YES →

5

Paper Path

Does the ADF move paper correctly?

5

YES →

6

Image Quality

Does the print quality meet customer requirements?

6

NO ↓

A.
Show Event Log to display information on the current error and correct it.

↓

B.
Verify copy module information on the Configuration Page.

↓

C.
After verifying Configuration Page, go to Step 6.

NO ↓

A.
Confirm connections to the ADF. Check the ADF motor belt and sensors.

↓

B.
Try a copy from the flatbed, or try different paper.

↓

C.
Perform cleaning and maintenance procedures if needed.

↓

D.
Perform an ADF test in service mode or an offline test.

↓

E.
If the ADF moves paper correctly, go to Step 5.

NO ↓

A.
Does the Copy Module output show problems similar to the samples in the image quality tables in this chapter?

↓

B.
Isolate the problem to the ADF or flatbed or both.

↓

C.
Perform cleaning and maintenance procedures if needed.

↓

END

Figure 7-6 **Copy Module Troubleshooting Process (2 of 2)**

4. Information Pages (page 725)

5. Paper Path (page 726)

6. Image Quality (page 727)

Troubleshooting the Print System

Preliminary Operating Checks

Prior to troubleshooting a specific printer problem, you should ensure that:

- The printer is being maintained on a regular basis as described in Chapter 4.
- The customer is using acceptable paper as specified in the *HP LaserJet Printer Family Print Media Guide*.
- The printer is positioned on a solid, level surface.
- The line voltage does not vary more than 10% from the nominal rated value as specified on the Power Rating Label.
- The operating environment for the printer and paper is within the temperature and humidity specifications listed in Chapter 1 of this manual.
- The printer is never exposed to ammonia fumes such as those produced by diazo copiers or office cleaning materials.
- The printer is not exposed to direct sunlight.
- Non-HP components (such as refilled Toner Cartridges, font cartridges, and memory boards) are removed from the printer.

Note When moving the printer into a warm room from a cold location such as a warehouse, various problems can occur due to condensation in the printer. For example, if the photosensitive drum is cold, the resistance of the photoconductive layer will be high. This will lead to incorrect contrast. Leave the printer running for 10 to 20 minutes.

Note For information on the 3,000-sheet Stapler/Stacker, see HP 3,000-sheet Stapler/Stacker Service Manual Supplement for Paper-Handling Accessories (C4788-90904).

Communication

Ask the customer to run a print job from the host system. If the print job is successful, communication to the printer is ensured.

Interface Troubleshooting
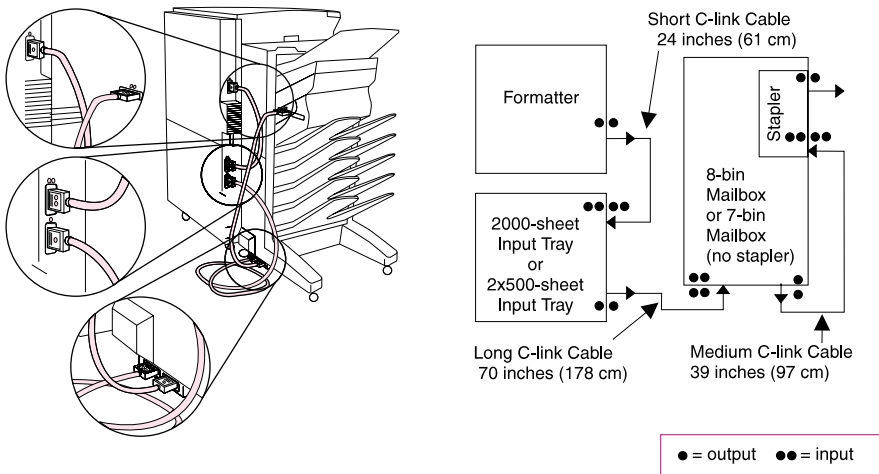
Figure 7-7 **Communications Link (C-link) Cables, Supported Daisy Chain Connections**

Note If the 7-bin Tabletop Mailbox is sitting on a tabletop instead of on a stand, it is the first device in the daisy chain.

All C-link cables have a single dot molded into the device output connector cable end, and two dots molded into the device input connector cable end.

Note It is important that the C-link cables are installed in the supported daisy chain configuration as shown in figure 7-7. This is so that the devices are recognized and correctly reported on the Event Log.

It is possible, but not recommended, to attach the C-link cables in other configurations. This will rearrange the supported device numbering. Keep this configuration in mind when evaluating the Event Log.

If any of the installed devices are not shown on the configuration page, verify that the C-link cabling is correctly connected and functional (figure 7-7) and that DC power is available to the paper handling devices. Check and reseat suspect cable connections. If any of the cables are replaced, you must cycle the power to have the printer recognize the device again.

Network Troubleshooting

This section provides an overview of the printer's interface requirements.

Note Communication problems are normally the customer's responsibility. Refer the customer to the network administrator for assistance in troubleshooting network problems.

Test Message

After the printer is installed, verify communications between the printer and the IBM-compatible computer. Enter the following at the DOS prompt:

`C:\DIR>LPT1` ENTER (for printing to parallel port #1)

The printer should print a directory listing of the C:\ directory.

EIO Troubleshooting

The JetDirect Configuration Page shown in figure 7-8 on page 586 contains valuable information about the current status of the EIO accessories. Before attempting to troubleshoot a network problem or notifying your network consultant of a problem, always print a Configuration Page from the Control Panel's Information Menu. If an EIO accessory is installed, the JetDirect Configuration Page prints too.

See the *HP JetDirect Network Interface Configuration Guide* for detailed explanations of network issues.

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1

Network statistics

I/O card status

IP address

IPX/SPX status

Node name
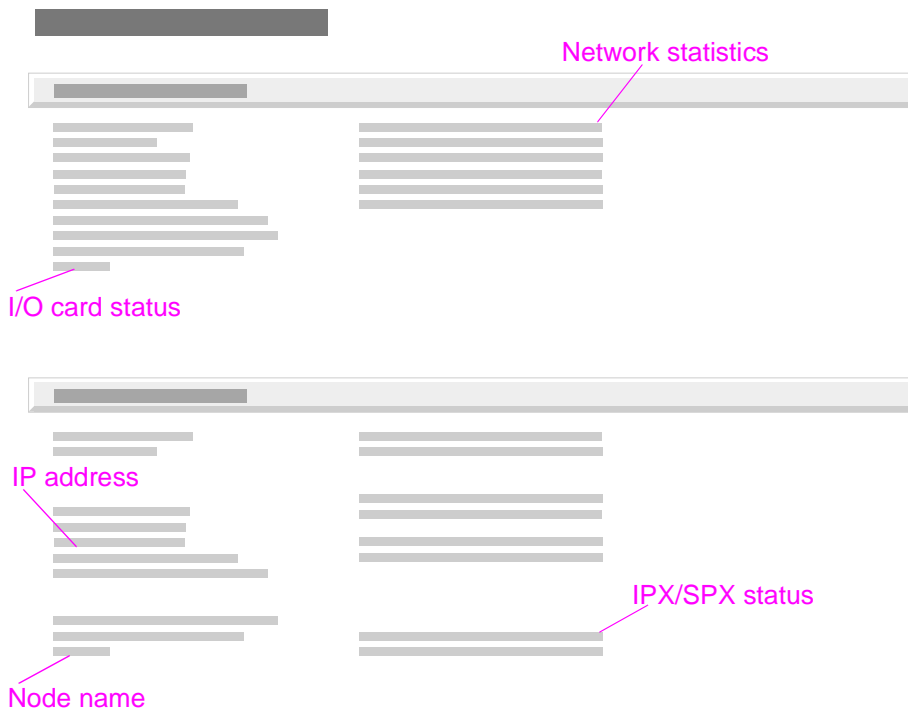
Figure 7-8 **Sample JetDirect Configuration Page**

- If the EIO JetDirect Card has successfully powered up and completed its internal diagnostics, the `I/O CARD READY` message will appear. If communication is lost, an `I/O NOT READY` message appears followed by a two digit error code. Consult the *HP JetDirect Network Interface Configuration Guide* for further details and recommended action.

- The "Network Statistics" column indicates the status of network activity. Bad packets, framing errors, un-sendable packets, and collisions should be minimal. If a high percentage (greater than one percent) of these occur, contact the network administrator. All of the statistics are set to zero when the printer is powered off.

- A "Novell Status" block should state the Novell printer server name to which the printer is connected. If the Node Name reads "NPIxxxxxx" (xxxxxx = last six digits of the EIO's LAN address), the EIO card has not been configured for a Novell server (as in figure 7-8). This could indicate that the card is operating under an IPX protocol other than Novell. Consult with the network administrator if the Node Name is not present.

- In the TCP/IP protocol block, the default IP address is "192.0.0.192." It is acceptable to operate the printer with this default address. The error message, `ARP DUPLICATE IP ADDRESS` may appear in this block. This is also an acceptable error code if the TCP/IP protocol is not being used. Please check with the network administrator to determine the correct IP address for the printer.

Verify Host System Operation

Try to print to another known working printer or move the failing printer to a known working location. Verify that the correct driver is installed and operating properly.

Verify Network and Server Operation

- Try to print the job to the printer's parallel port.
- Try to print from the host system through the network to another printer. Contact the network administrator for assistance.

General Troubleshooting Information

Miscellaneous Problems and Solutions

The following lists symptoms and typical solutions to those problems.

Abnormal noises are evident, such as grinding or chattering when main motor energized.

From the toner cartridge area:

1   Replace the toner cartridge.

2   Replace the Main Gear Assembly. See Main Gear Assembly on page 310 for instructions.

From Tray 2 or 3:

1   Verify proper paper loading, acceptable media.

2   Inspect the "fingers" on the paper trays to ensure proper paper size detection.

3   Replace the Paper Input Unit. See Paper Input Unit (PIU) on page 314 for instructions.

4   Replace the Main Gear Assembly. See Main Gear Assembly on page 310 for instructions.

From 2000-sheet Input Tray:

1   Check the white plastic bushing on Tray 4. The bushing is located on the Tray 4 main drive assembly. The bushing accepts the Tray 4 pilot pin when Tray 4 is closed. Replace if broken.

2   Replace 2000-sheet Input Tray Vertical Transfer Assembly.

3   Replace the 2000-sheet Input Tray Main Drive Assembly.

From 8-bin Mailbox:

1   Verify pawls are riding above the output rollers (see figure 7-25 on page 703).

2   Check the (small rollers in the flipper area).

Will not feed from Tray x when printing from application; paper path test works fine.

Verify the correct paper size:

1 Tray 1: From Control Panel Paper Handling Menu.

2 Tray 2, 3, 4, or 5: Remove and reseat the paper fences in the correct position in the failing tray.

Excessive Image Skew

1 Remove and reseat the paper fences (front fence in paper trays).

2 Image Skew Specifications:

- 1 mm over 260 mm length
- First line to leading edge 5.0 +/- 2.5 mm
- Text Stretching 1% simplex 1.5% duplex

Envelope

- Skew 6.0 over 260 mm length
- First line on envelopes to leading edge/ left margin 15 +/- 4.5 mm

Loses Page Counts, Serial Number.

Print the Event Log and look for a 68 error with a page count of zero. Using the Event Log, take the page count shown at the top of the page and add the page count from any/all errors preceding any 68 errors. Use this number and enter it into the Control Panel from Service Mode.

Will not print from 2000-sheet Input Tray or 2 x 500-sheet Input Tray.

1 Print the Configuration Page. Make sure that the Paper Handling Controller and 2000-sheet or 2 x 500-sheet Input Tray are listed in the Paper Handling Options section.

2 Verify that power is supplied the to the 2000-sheet or 2 x 500-sheet Input Tray.

3 Run a paper path test from Tray 4 or 5. If the test is successful, the paper size detection switches may have failed or an incorrect size is specified in the application software.

4 Replace the Paper Handling Controller if it is not shown on the Configuration Page.

5 Verify that the C-link cables are connected as shown in figure 7-7 on page 583.

6 Reseat the C-link Cable, and inspect for pushed in pins.

7   Replace the C-link Cable.

8   Replace the 2000-sheet or 2 x 500-sheet Input Tray Controller PCA.

Jams when printing envelopes, transparencies, or labels to the 8-bin Mailbox or 5-bin Mailbox with Stapler.

The 8-bin Mailbox does not support these media. Direct these media to the Face-up Bin (top bin of the 8-bin Mailbox).

Stops printing and hangs on certain jobs.

1   Remove any non-HP Memory DIMMs and retry.

2   Set to 300 DPI and retry.

Top 2/3 of portrait page is lighter.

1   Replace the Toner Cartridge and retry.

2   Replace the Transfer Guide.

Will not print to Mailbox.

1   Print the Configuration Page. Make sure that the Paper Handling Controller, 2000-sheet Input Tray, and 8-bin Mailbox are listed in the Paper Handling Options section.

2   Replace the Paper Handling Controller if it is not shown on the Configuration Page.

3   Inspect the C-link Cables for pushed out pins.

4   Replace the C-link Cables.

5   Connect the 8-bin Mailbox directly to the printer. If it is now recognized on the Configuration Page, replace the 2000-sheet Input Tray Controller.

6   Replace the 8-bin Mailbox Controller.

7   Replace the 8-bin Mailbox External Power Supply.

8   Replace the entire 8-bin Mailbox.

Wrinkling Envelopes

1   Place the Fusing Levers in up position and retry the envelopes.

2   Try new media. Make sure that the envelopes are within specifications. See the *HP LaserJet Family Print Media Guide*.

3   Verify the Output Destination is the left Face Up Bin.

Poor Fusing

1   Make sure that the Fusing Levers are in the down position for cut sheet paper.

2   Verify all packing spacers have been removed from inside the printer.

3   Try new media. Make sure that the media is within specifications. See the *HP LaserJet Family Print Media Guide*.

4   Verify that the proper fusing mode for the media is set in the Control Panel.

5   Make sure that the AC power does not fluctuate out of range during the print cycle. See table 2-4 on page 87.

Feeds from incorrect tray when selecting different media for the first page of the job.

First you must determine if it is a hardware or a software issue. Run a paper path test from each paper tray to eliminate the hardware. See page 648.

If the paper path test fails, troubleshoot the error message.

Make sure that the most current printer driver is installed. Select the **Print Quality Tab** from the printer driver. Click on **About**. You may find the most current driver in various electronic locations. Check with HP Service and Support.

If the paper path test works, it may be a software or user related issue. Perform the following steps:

1   Define the media types that are loaded in each paper tray. This can be done from either JetAdmin or the front control panel of the printer.

From JetAdmin

1   Select the Trays tab.

2   Select the correct media type for each tray listed.

3   Click on **OK** save your changes and exit JetAdmin.

From the Control Panel

Note   To set the paper type for Tray 1, set TRAY 1 MODE=CASSETTE from the Paper Handling Menu.

1   From the Paper Handling Menu, press ITEM to select a specific tray.

2   Press + until you get to the correct type of media.

3 Press SELECT.

4 Repeat this step for each paper tray.

5 Press GO.

6 From inside your application, choose the page setup option for that application.

7 Select the paper source/type option.

8 Select the correct media source/type for the first page.

9 Select the correct media source/type for all other pages.

CAUTION Do not make changes to the driver unless the application does not provide this option. Print job settings selected through your application always override settings made through the printer driver. Printer settings made in the application or print driver always override the corresponding setting made on the printer Control Panel.

10 Print the document.

Paper Curl

Paper curl is inherent to the laser printing processes, as it occurs when paper is subjected to heat. Paper curl tends to relax as the paper cools while resting on a flat surface. The specification for maximum paper curl when the paper is lying flat before print is 0.2 inches (5 mm).

Although paper curl cannot be totally eliminated, some steps can be taken to lessen its impact, as suggested in the following table.

Table 7-1. Paper Curl

Possible Cause	Recommended Action
1. Paper Path	Try using Tray 1 and output the paper to the Face-up Bin.
2. Paper Surface	The recommended printing surface of the page is usually marked on the end of a ream of paper, indicated by a small arrow and the phrase "print this side first." Load paper in Tray 1 with the recommended printing surface facing up (facing down in Trays 2, 3, 4, and 5).
3. Paper Storing and Handling	Over time, paper assumes the characteristics of its storage environment (in a humid environment, paper absorbs moisture; in a dry environment, paper loses moisture). Paper with higher moisture content will tend to curl more. Evaluate the storage conditions of the paper.
4. Paper Type	All paper is manufactured differently (different textures, moisture content, drying processes, composition, etc.). Change the type of paper being used and re-evaluate the paper curl results.

Troubleshooting the Printer and Paper-handling Devices

Step 1. Power On

It is important to have the printer's Control Panel functional as soon as possible in the troubleshooting process so that the printer's diagnostics can assist in locating printer errors.

Table 7-2. Power On Defects or Blank Display

Problem	Action
1. Is AC power available at the printer's power receptacle?	Verify. See table 2-4 on page 87.
2. Is the printer's on/off switch set to on?	Push the switch to the on position.
3. Are the printer's fans on? (See figure 7-9 on page 596 to locate the fans.)	Note: Fan operation is significant since all fans are controlled by the printer's DC Controller PCA. When the printer is in PowerSave mode, the fans are off. Make sure that the printer is not in PowerSave mode. Press GO. Operational fans indicate: 1. AC power is present in the printer. 2. DC power supply is functional (both 24V DC and 5V DC are being generated). 3. DC Controller PCA's micro-processor is functional.
NO	If the fans are NOT working, turn off the printer and remove the printer's Formatter PCA. Disconnect all the printer's paper handling options. Then turn on the printer and check the fans again. If the fans are still not working, perform the following steps: 1. Verify that all fans are connected to the DC Controller PCA according to figure 7-30 on page 708. 2. Replace the low-voltage DC power supply. See Low Voltage Power Supply (LVPS) on page 324 for instructions. 3. Replace the DC Controller PCA. See PCA, DC Controller on page 315 for instructions.

Table 7-2. Power On Defects or Blank Display (continued)

Problem	Action
YES	If the fans are working but the printer's Control Panel is blank, print an engine test. See "Engine Test" on page 597. If the engine test was successful, perform the following steps: 1. Reseat or replace the cable from the Control Panel that is connected to J203 of the DC Controller PCA (see the main wiring diagram in the back of the manual). 2. Replace the printer's Formatter PCA. See Formatter Assembly on page 304 for instructions. 3. Replace the Control Panel assembly. See Control Panel on page 269 for instructions. If the engine test was not successful, verify that there is no paper in the paper path. Retry the engine test. If the engine test is still unsuccessful, replace the DC Controller PCA. See PCA, DC Controller on page 315 for instructions.
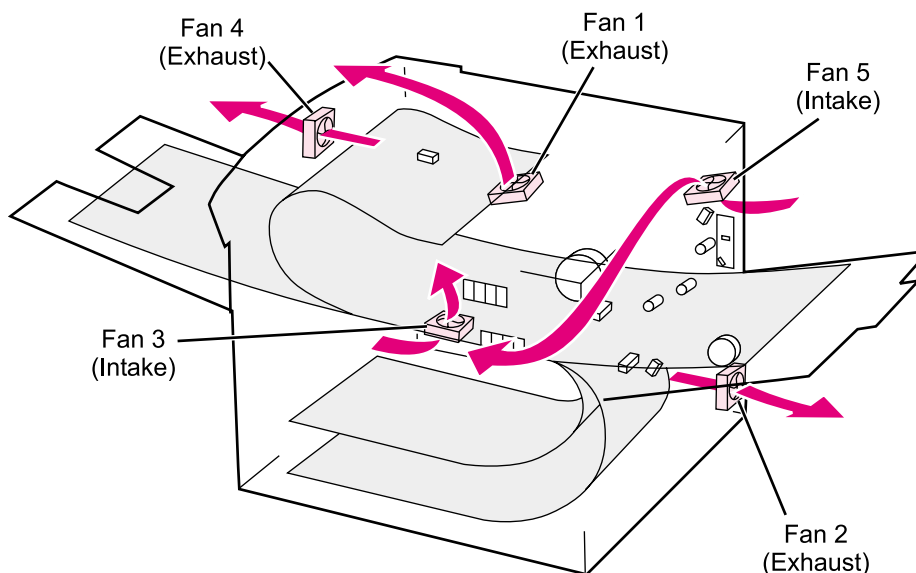
Figure 7-9   Fan Location and Airflow

Table 7-3. Fans

Fan Name	Fan Location
Fan 1: Laser/Scanner Fan	Exhaust air flows from the back of the printer, on the left-hand side of the fusing assembly.
Fan 2: Low-voltage Power Supply Fan	Lower right-hand corner of the printer.
Fan 3: Formatter Fan (intake)	Intake fan below the formatter.
Fan 4: Standard Output Delivery Fan	Directly above the center of the fusing assembly.
Fan 5: MP Tray (Intake) Fan	Right side of MP (Tray 1) Assembly

Note   Control Panel numbers do not correspond to fan numbers (i.e., a fan error ending in `.i` does NOT refer to Fan 1).

Engine Test

The engine test verifies that the print engine is functioning correctly. This test is very useful for isolating printer problems since the Formatter PCA is completely bypassed during an engine test. The engine test prints a full page of horizontal lines across the entire printable area. The engine test prints from Tray 3 ONLY and can be activated with the Formatter PCA removed.

Note   Tray 3 **must** be installed and loaded with paper to perform an engine test. Also, make sure that the EP toner cartridge is installed in the printer.

Engine Test Button Location

The engine test button is located on the DC Controller PCA. It is accessible through a hole at the right rear of the printer. See figure 7-10.

Printing an Engine Test

To print an engine test, use a non-metallic object (such as a pencil) to press the engine test button (see figure 7-10). A single test page will print. The engine test will be continuous as long as the button is held in.

Engine Test Button Access

Engine Test Printout
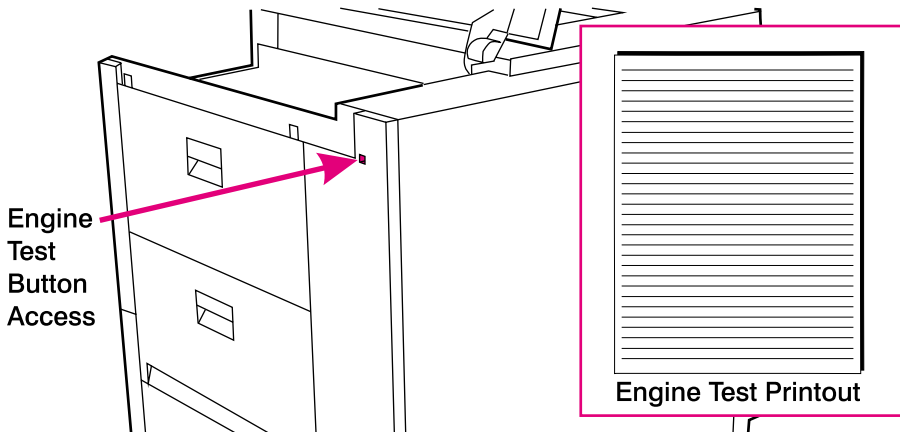
Figure 7-10   **Engine Test Button**

Step 2. Display

The Control Panel should display READY, OFFLINE, or POWERSAVE ON.
For information about errors displayed, access the Event Log. If the
display is blank, see Power On Defects or Blank Display on page 594.

Event Log Pages

Use the Event Log to diagnose and troubleshoot printer errors and
intermittent failures. You can either print or display the Event Log from
the Control Panel's Information Menu. (Select PRINT EVENT LOG or
SHOW EVENT LOG.) (The Configuration Page lists the maximum number
of entries in the Event Log.)

See figure 7-11 on page 600 for a sample page one of the Event Log.
Page one of the Event Log shows the current page count at the left
side of the page, with the printer's serial number directly to the right of
the page count. The left column is the error sequence number, with
the error listed on the right (the highest sequence number is the most
recent event logged). The next column is the page count at the time of
the error, and the last column is the Personality (PCL or PostScript)
column or the Jam Cause at the time of the error.

Note   The HP LaserJet 8100 series Event Log consists of one page only. The
HP LaserJet 8150 series Event Log contains two pages.

See figure 7-12 on page 601 for a sample page two of the HP LaserJet 8150 series Event Log. Use the following table as a key to the troubleshooting information contained in page two:

Table 7-4. HP LaserJet 8150 Series Event Log Page 2

Symbol	Explanation
L	Number of images printed in Low Fusing Mode.
N	Number of images printed in Normal Fusing Mode.
H1	Number of images printed in High 1.
H2	Number of images printed in High 2.
H3	Number of images printed in High 3.
E2E	Number of images printed using Edge-to-Edge.
TD	Toner density setting at the time this page is printed.
FM	Fuser mode setting at the time this page is printed.
AJL	Average job length.
MJL	Maximum job length.
S	Number of pages printed in simplex (one side of the paper).
D	Number of pages printed in duplex (both sides of the paper).
TC	Number of toner cartridges used.
PP/C	Pages printed per cartridge (up to the last 20 cartridges).
PMK	Number of pages per preventive maintenance kit (up to the last five kits).
PS	PowerSave setting at the time this page is printed.

See "Printer Message Tables" on page 607 for more information about correcting Event Log messages in the printer and paper handling devices.

HP LaserJet

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Figure 7-11   Sample Event Log, page one

HP LaserJet

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Event Log Page   2

HP Toner Gauge

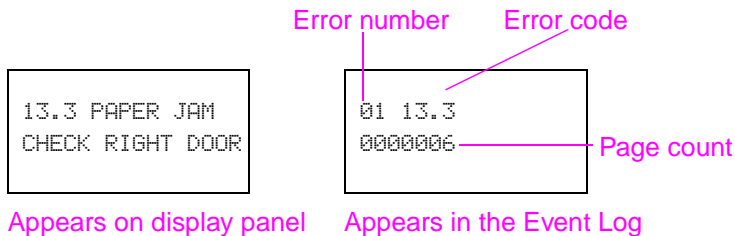**Figure 7-12   HP LaserJet 8150 Series Sample Event Log, page two**

Print the Event Log

The printer's internal Event Log stores the most recent errors and can be printed at any time. To print the Event Log:

1. Press Menu until INFORMATION MENU appears.

2. Press Item until PRINT EVENT LOG appears.

3 Press Select to print the Event Log.

Display the Event Log

If the printer cannot print or move any paper, follow these steps to display the Event Log. Otherwise, print the Event Log.

1. Press Menu until INFORMATION MENU appears.

2. Press Item until SHOW EVENT LOG appears. Press Select to show the Event Log.

3. Press - Value + to scroll through the Event Log.

4. Write down the error messages. For example:

Error number   Error code

```
13.3 PAPER JAM            01 13.3
CHECK RIGHT DOOR          0000006                  Page count
```

Appears on display panel   Appears in the Event Log

5. Check the Event Log for specific error trends in the last 10,000 printed pages.

6. Ask the customer for any observed error trends. (For example, do paper jams tend to occur in a specific area of the printer?)

7. Record any specific error trends.

8. See "Printer Message Tables" on page 607 and follow the recommended action.

9. If the Control Panel displays READY, OFFLINE, or POWERSAVE ON, go to the next section. If it displays any other message, repeat this procedure starting from step 1.

Interpret the Event Log

See figure 7-11 on page 600 for a sample Event Log.

The errors on the control panel and the Event Log codes may not be the same. For example, `13.11` on the control panel may be `13.11 1B` in the Event Log. The 1B provides more information about the error. Likewise, if a `50.1 FUSER ERROR` is displayed on the Control Panel, the Event Log will record a `50.02.01` error, with the `02` signifying that 2 sensors were blocked. Make sure that you refer to the correct number in "Printer Message Tables" on page 607.

When an error is detected in an Optional Paper Handling Device, a `13.11, 11.zz, 22.zz to 13.12,13.22,` or `66.xy.zz` will be displayed on the Control Panel.

Hint   Whenever a `13.xx` appears on the Control Panel, a good practice is to clear the jammed paper from the printer, press Go to take the printer offline, and print the Event Log. If you cannot print the Event Log, you can still display it on the Control Panel. The last error is the error at the top of the Event Log printout with the highest number in the left-most column. Write the error next to the last error logged.

To interpret the Event Log:

● Each individual entry in the log is called an "error," while all errors occurring at the same page count are called an "event." See the Recommended Action in "Printer Message Tables" on page 607 for each error comprising an event to gain a clear picture of what took place during that event. Events usually conclude with a time-out or no response from the device (error `66.xy` in the Event Log). Turn the printer off, and then turn the printer on.

● Use the Event Log table in this section to associate errors in the Event Log with the Control Panel error message. Follow the Recommended Action listed in the Event Log Table starting on page 607 for each error or event.

Note   It is assumed that any Paper Handling Devices are connected as shown in the C-link Cable Diagram (figure 7-7 on page 583). The errors will be logged with different device numbers if any non-standard cabling is installed.

Step 3. Printer and Paper-Handling Devices Messages

Be sure to read the exact text of the control panel message, including the error message number and the text, in order to locate the error message in the tables.

This printer has enhanced information in the control panel.

Printer messages displayed on the control panel provide five categories of information. Each message category is assigned a priority. If more than one condition occurs at the same time, the highest priority message is displayed. When it has been cleared, the next priority message will be displayed, and so on. The displayed messages and their priorities are:

● Printer Status
● Warning messages
● Error messages
● Critical error messages
● External Paper Handling Device Messages

Control Panel and Event Log Message Format

The format of Control Panel messages is:

● `13.xy PAPER JAM IN INPUT/OUTPUT DEVICE`
● `INPUT/OUTPUT DEVICE CONDITION xy.zz`
● `66.xy.zz INPUT/OUTPUT DEVICE FAILURE`

The Event Log messages have the following format:

● `13.xy zz INPUT/OUTPUT DEVICE PAPER JAM`
● `65.xy.zz INPUT/OUTPUT DEVICE CONDITION`
● `66.xy.zz INPUT/OUTPUT DEVICE HARDWARE MALFUNCTION`

Note   For information on the 3,000-sheet Stapler/Stacker, see HP 3,000-sheet Stapler/Stacker Service Manual Supplement for Paper-Handling Accessories (C4788-90904).

Note   The following are two examples of Control Panel messages, the corresponding Event Log messages, and what the messages mean. These examples do not show the recommended action to follow to fix the problem. See "Printer Message Tables" on page 607 for the recommended actions for these messages.

Control Panel Message	Event Log Page	Meaning
`13.11 PAPER JAM IN INPUT DEVICE`	13.11 1B	A paper jam occurred in the first C-link device configured. It is an input device (2000-sheet Input Tray or 2 x 500-sheet Input Tray) with an error code 1B. This is normally a timeout at an entry or exit sensor.
`66.22.09 OUTPUT DEVICE FAILURE`	66.22.09	A hardware malfunction occurred in the second C-link device configured. It is an output device (Mailbox) with an error code 09. This is an external memory error.

Note   Be sure to print a configuration page to properly identify the input or output device configured. Notice that the error format only identifies the C-link device number and the device type; it does not identify which input or output device is used in the system.

Error Format
for Paper Handling
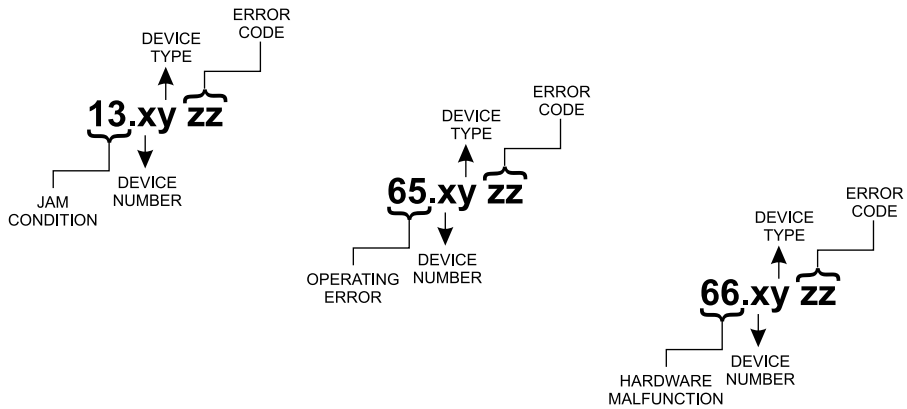
Figure 7-13 Error Format for Paper Handling

Printer Message Tables

Printer messages are grouped according to the device generating the error. Within the groupings listed below, the alphabetic error messages are listed first, followed by the numeric messages.

- "Engine Error Messages" (page 608)
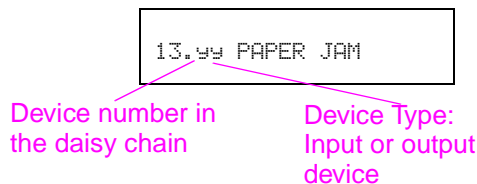- "Duplexer Error Messages" (page 643)

Input Devices

- "Envelope Feeder Error Messages" (page 627)
- "2000-sheet Input Tray Error Messages" (page 620)
- "2 x 500-sheet Input Tray Error Messages" (page 624)

Output Devices

- "7-bin Tabletop Mailbox Error Messages" (page 629)
- "8-bin Mailbox Error Messages" (page 634)

- "Stapler Error Messages" (page 640)
- "Paper Handling Device Controller Messages" (page 644)

The following is an example of the format for numerical control panel messages.

```
13.yy PAPER JAM
```

Device number in the daisy chain

Device Type: Input or output device

Engine Error Messages

Table 7-5. Engine Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
13.1 PAPER JAM CHECK RIGHT DOOR	13.1 zz	Paper feed 1. Paper late jam. Paper did not reach PS2.	Use the Paper Path Test on page 153 and page 648 to see if a problem exists from both engine trays. If PS2 is bad, it will fail when printing from Tray 2 or 3. Verify flag movement by manually inserting paper in the sensor path. Replace PS2 or the Paper Input Unit (PIU) Assembly. See Paper Input Unit (PIU) on page 314 for instructions.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.3 PAPER JAM CHECK RIGHT DOOR` alternates with `THEN OPEN AND CLOSE TOP COVER`	13.3 XX	Paper delay jam. Paper did not reach PS1 at the registration area.	1. Remove the toner cartridge, lift the green handle, and verify the sensor flag operation. 2. Make sure that the sensor is not broken. 3. Replace the registration assembly if necessary. See Registration Assembly on page 325 for instructions.
`13.5 FUSER OUTPUT, PAPER STOPPED JAM`	13.5 XX	Fuser output, paper late jam. Paper never reached PS1403 at the fusing assembly.	Remove the toner cartridge, and check the path between the registration and fusing assemblies. PS1403 on the sensor PCA may be faulty.
`13.6 FUSER OUTPUT PAPER STOPPED JAM`	13.6 XX	PS1402 did not sense the paper. Fuser output, paper stopped jam. Paper never exited the fusing assembly.	1. Perform the paper path test to verify all input and output. 2. Check the fuser flag at the sensor board area. 3. Check the fuser access door. 4. Make sure that the flag is not broken. PS1403 on the sensor PCA, or the delivery exit spring/gears, may be faulty.
`13.9 CHECK LEFT DOOR`	13.9 XX	Face-down bin paper late jam.	Paper did not arrive at PS1402 when expected. Inspect the path between the fuser and delivery assemblies. Check the diverter assembly.
`13.20 PAPER JAM CHECK ...`	13.20 XX	The engine could not eject a page in the printer. The front panel message (...) will indicate the sensor closest to the paper.	Remove the jam from the location indicated on the control panel.
`13.A PAPER JAM CHECK LEFT DOOR`	13.A XX	Paper stopped at the Face-down bin.	Check the paper path. This jam is sensed by PS1402 on the sensor PCA.
`20 INSUFFICIENT MEMORY` alternates with `PRESS GO TO CONTINUE`	Error	The printer received more data than can fit in its available memory. You might have tried to transfer too many macros, soft fonts, or complex graphics.	1. Press Go to print the transferred data (some data might be lost). 2. Simplify the print job, or install additional memory.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`21 PAGE TOO COMPLEX` alternates with `PRESS GO TO CONTINUE`	Error	The data (dense text, rules, raster or vector graphics) sent to the printer was too complex.	1. Press Go to print the transferred data. (Some data might be lost.) 2. To print the job without losing data, from the Configuration Menu in the printer control panel, set `PAGE PROTECT=ON`, print the job, and then return to `PAGE PROTECT=AUTO`. Do not leave `PAGE PROTECT=ON`; it might degrade performance. If this message appears often, simplify the print job.
`22 EIO x BUFFER OVERFLOW` alternates with `PRESS GO TO CONTINUE`	Error	Too much data was sent to the EIO card in the specified slot (x). An improper communications protocol may be in use.	1. Press Go to clear the message. (Data will be lost.) 2. Check the host configuration.
`22 PARALLEL I/O BUFFER OVERFLOW` alternates with `PRESS GO TO CONTINUE`	Error	Too much data was sent to the parallel port. This error can occur if the driver you are using is not IEEE-1284 compliant. For best results, use an HP driver that came with the printer.	1. Check for a loose cable connection and be sure to use a high-quality cable. (Some non-HP parallel cables might be missing pin connections or might otherwise not conform to the IEEE-1284 specification.) This error can occur if the driver you are using is not IEEE-1284 compliant. For best results, use an HP driver that came with the printer. 2. Press Go to clear the error message. (Data will be lost.)
`22 SERIAL I/O BUFFER OVERFLOW` alternates with `PRESS GO TO CONTINUE`	Error	Too much data was sent to the serial port.	1. Make sure that the correct serial pacing option is selected from the I/O Menu in the printer's control panel. 2. Print a Menu Map, and verify that the serial pacing item (from the I/O Menu in the printer's control panel) matches the setting on the computer. 3. Press Go to clear the error message. (Data will be lost.)

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`40 BAD SERIAL TRANSMISSION` alternates with `PRESS GO TO CONTINUE`	Error	The printer encountered an error while transferring data from the computer. The error might have occurred for several reasons: • The computer was powered on or off while the printer was online. • The printer's serial configuration was not the same as the computer's.	1. Verify the cable connections. Make sure that the printer's serial configuration is set the same as the computer from the I/O Menu in the printer's control panel. 2. The serial baud rate setting can be accessed from the I/O Menu in the printer's control panel. 3. Press Go to clear the error message and continue the printing. 4. Turn the printer off. 5. Reseat the EIO card, and turn the printer on.
`40 EIO x BAD TRANSMISSION` alternates with `PRESS GO TO CONTINUE`	Error	The connection has been broken between the printer and the EIO card in the specified slot.	1. Turn the printer off, and reseat the card. 2. Press Go to clear the error message and continue printing.
`41.x PRINTER ERROR` **alternates with** `PRESS GO TO CONTINUE`	Error	A temporary printing error occurred. X Description 1 Unknown misprint error. 2 Beam detect misprint error. 3 See error 41.3. 4 No VSYNC error. 5 Media feed error. 9 Noise VSREQ error.	Press Go. The page containing the error will automatically be reprinted. If this message persists: 1. Reseat the connections to the Laser/Scanner and the Engine Controller Board. 2. Replace the Laser/Scanner. See Laser/Scanner Assembly on page 308 for instructions. 3. Replace the Engine Controller Board.
`41.3 UNEXPECTED PAPER SIZE`	Error	The paper size you are trying to print is not the same as the control panel setting for Tray 1.	1. Make sure that the control panel setting for Tray 1 or the Envelope Feeder is correctly adjusted for size. (The printer will continue trying to print the job until the size settings are correct.) 2. Press Go. The page containing the error will automatically be reprinted. (Or, you might want to press CANCEL JOB to clear the job from the printer's memory.)

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`50.x FUSER ERROR`	Critical Error	A fuser error has occurred. X Description 1 Low Fuser temperature. 2 Fuser warm up service. 3 High Fuser temperature. 4 Faulty Fuser. 5 Inconsistent Fuser.	Turn the printer off for at least 20 minutes, and then turn the printer on. If the error continues: 1. Make sure that the Fusing Assembly is installed correctly and is fully seated into its connectors (no bent pins or pins outside their receptacles). 2. Reseat or replace the fuser cable assembly. 3. Replace the DC Controller.
`51.x PRINTER ERROR`	Error	A temporary printing error occurred. X Description 1 Beam detect error. 2 Laser error.	1. Press Go. The page containing the error will automatically be reprinted. 2. Turn the printer off, and then turn the printer on. 3. Reseat the cables. See the wiring diagrams at the back of this manual. 4. Replace the Laser/Scanner. See Laser/Scanner Assembly on page 308 for instructions.
`52.x PRINTER ERROR`	Error	A temporary printing error occurred. X Description 0 Laser/scanner error. 1 Laser/scanner startup error. 2 Laser/scanner rotation error.	1. Press Go. The page containing the error will automatically be reprinted. 2. Turn the printer off, and then turn the printer on. 3. Reseat the cables. See the wiring diagrams at the back of this manual. 4. Replace the Laser/Scanner. See Laser/Scanner Assembly on page 308 for instructions.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`53.xy.zz` `PRINTER ERROR`	Critical Error	There is a problem with the printer's memory. The DIMM that caused the error will not be used. Values of x, y, and zz are as follows: x = DIMM type 0 = ROM 1 = RAM y = Device location 0 = Internal memory (ROM or RAM) 1 to 3 = DIMM slots 1, 2, or 3 zz = Error number 0 = Unsupported memory (for example, presence detect bad) 1 = Unrecognized memory (for example, presence detect bad) 2 = Unsupported memory size 3 = Failed RAM test 4 = Exceeded maximum RAM size 5 = Exceeded maximum ROM size 6 = Invalid DIMM speed 7 = DIMM reporting information incorrectly 8 = DIMM RAM parity error 9 = ROM needs to be mapped to an unsupported address 10 = DIMM address conflict 11 = PDC XROM out of bounds 12 = Unable to make a temporary mapping	1. Turn the printer off, and reseat or replace the specified DIMM. 2. Try the DIMM in another slot. 3. Replace the DIMM that caused the error.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action

`55.x`
`PRINTER ERROR`
alternates with
`PRESS GO TO`
`CONTINUE`
	Error	A printer error has occurred.
		X Description
		0 NO_RESET_REPORT
		1 NO_ENGINE_RESPONSE
		2 EXCESSIVE_GLITCHES
		3 LOST_PPRDY_SIGNAL
		4 COMMUNICATION_TIMEOUT
		5 BAD_TRAY_BIN_REPORTS
		6 ECC7_COMMAND_ERROR
		7 INCOMING_PARITY_ERROR
		8 OUTGOING_PARITY_ERROR
		9 MISSED_INTERRUPT
		A HUNG_COMMUNICATIONS
		B LOST_XISR_ERROR
		C INVALID_BUS_TIMEOUT
		D VERY_LATE_ECOMM_ISR
			1. Press Go to clear the error message.
			2. Turn the printer off and reseat the formatter board, all DIMMs, EIO Cards, and the hard disk drive.
			4. Check the cable from the DC controller and laser/scanner assembly.
			5. Replace the laser scanner assembly.
			6. Replace the DC controller PCA.
			7. Replace the formatter board.

`56.x`
`PRINTER ERROR`
alternates with
`CYCLE POWER TO`
`CONTINUE`
	Error	A temporary printing error occurred.
		X Description
		1 Illegal input.
		2 Illegal output.
			1. Press Go. The page containing the error will automatically be reprinted.
			2. Turn the printer off, and then turn the printer on.
			3. Check the printer's configuration.

`57.X` `FAN FAILURE`	Critical Error	A fan motor failure occurred. All fans are enabled to low speed operation at power on. Fans will go into high speed operation during the print cycle. X Description 2 Fan 3 - Formatter Fan (intake) 3 Fan 2 - Low-voltage power supply (exhaust) 5 Fan 1 -Laser/scanner (exhaust) Low-voltage power supply (exhaust) 6 Fan 4 - Face-down delivery (exhaust) 9 Fan 5 - Tray 1 fan	Turn the printer off, and then turn the printer on. If the message continues, check and reseat the cabling between the fan motors and the DC Controller PCA.

`58.x`
`PRINTER ERROR`
alternates with
`CYCLE POWER TO`
`CONTINUE`
	Error	A temporary printing error occurred.
		X Description
		1 Tray 1 lifter malfunction.
		2 Tray 2 lifter malfunction.
		3 Tray 3 lifter malfunction.
		4 Tray 4 lifter malfunction.
		X Tray X lifter malfunction.
			Turn the printer off, and then turn the printer on.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`59.x` `PRINTER ERROR`	Critical Error	A printer error has occurred. X Description 0 Motor error. 1 Motor startup error. 2 Motor rotation error.	Turn the printer off, and then turn the printer on.
`62.x` `PRINTER ERROR`	Critical Error	There is a problem with the printer's memory. The X value refers to the location of the problem: 0 = Internal memory 1 to 3 = DIMM slots 1, 2, or 3	Reseat or replace the specified DIMM.
`64` `PRINTER ERROR`	Critical Error	A scan buffer error occurred.	Turn the printer off, and then turn the printer on. If this message persists, replace the Formatter.
`68 NVRAM ERROR` `CHECK SETTINGS`	Error	An error occurred in the printer's nonvolatile memory (NVRAM) and one or more printer settings has been reset to its factory default.	1. Print a configuration page and check the printer settings to determine which values have changed. 2. Remove EIO card. It will be reset if not removed. 3. Hold down CANCEL JOB while turning the printer on. This will clean up the NVRAM by removing old areas that are not being used.
`68 NVRAM FULL` `CHECK SETTINGS`	Error	The printer's nonvolatile memory (NVRAM) is full. Some settings might have been reset to the factory defaults.	1. Print a configuration page and check the printer settings to determine which values have changed. 2. Remove EIO card. It will be reset if not removed. 3. Hold down CANCEL JOB while turning the printer on. This will clean up the NVRAM by removing old areas that are not being used.
`69.x` `PRINTER ERROR`	Critical Error	A temporary printing error occurred. X Description 0 The duplex mechanism has failed. 1 The duplex slide adjust has failed.	1. Turn the printer off, and then turn the printer on. 2. Reseat the duplexer.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`79.xxxx` `PRINTER ERROR`	Critical Error	The printer detected an error. The numbers (xxxx) indicate the specific type of error.	1. Turn the printer off, and then turn the printer on. 2. Try printing a job from a different software application. If the job prints, go back to the first application and try printing a different file. (If the message only appears with a certain software application or print job, contact the software vendor for assistance.) If the message persists, try the following: 1. Cycle power. 2. Reseat or replace the interface cable and cycle power. 3. Remove the DIMMs one at a time and cycle power. 4. Try using the parallel interface, if possible. 5. With the EIO cards removed from the printer, perform a cold reset. 6. Remove the Hard Disk and cycle power. 7. If the error persists, replace the Formatter.
`8X.YYYY` `EIO ERROR`	Critical Error	The EIO accessory card in slot X has encountered a critical error as specified by YYYY.	1. Move the EIO card to another slot. 2. If the error persists, replace the EIO card. 3. If the error is corrected, reseat the EIO card in the original slot.
`BAD OPT TRAY` `CONNECTION`	Error	The optional tray is not connected properly.	1. Re-install the optional tray. 2. Make sure the optional tray is connected and the connector is not damaged. 3. Replace the optional tray.

`CHECK INPUT`
`DEVICE`
alternates with
`PAPER PATH`
`OPEN PLEASE`
`CLOSE IT`
	Error	The optional input tray cannot feed paper to the printer because a door or paper guide is open.	Check the doors and paper guides.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
CHECK OUTPUT DEVICE alternates with CLOSE OUTPUT DELIVERY PATH	Error	The paper path between the printer and the external paper handling output device is open and must be closed before printing can continue.	Close the paper path.
EXTERNAL DEVICE INITIALIZING	Status	When an external paper handling device is connected to the printer, it must have 10 seconds to initialize after boot or after coming out of PowerSave mode.	No action required.
MANUALLY FEED [SIZE]	Error	Tray 1 does not contain the specified size paper.	Load the specified type of paper into Tray 1.
MANUALLY FEED [TYPE] [SIZE]	Error	One of the following occurred: • A manual feed was requested. • There is no paper in Tray 1. • The wrong size paper is loaded. • The control panel is not set for the kind of paper loaded.	1. Load the requested paper into Tray 1. 2. Press GO if the desired paper is already loaded in Tray 1. 3. Press - VALUE + to scroll through the available types and sizes. 4. Press SELECT to accept the alternate type or size.
MANUALLY FEED [TYPE] ENV	Error	Tray 1 does not contain the specified type of envelope.	Load the specified type of envelope into Tray 1.
MANUALLY FEED TRAY 1 ENVELOPE	Error	Tray 1 does not contain an envelope.	Load an envelope into Tray 1.
OUTPUT BIN FULL alternates with CLEAR PAPER FROM [BINNAME]	Error	The output bin is full and needs to be emptied.	1. Remove the media from the Face-down bin. 2. Make sure that the sensor flag moves freely.
TRAY X CONTAINS UNKNOWN MEDIA	Warning	The media type in the specified tray cannot be determined.	Load known media, or set the correct media type.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`TRAY X EMPTY`	Warning	The paper tray is empty. Paper is sensed in the tray by black plastic flags and photosensors. If paper is not in a tray, the flags will rotate through an access in the upper tray. When paper is present, the flags are blocked from rotating through this access.	1. Load the empty tray (x) to clear the message. If you do not load the specified tray, the printer will continue printing from the next available tray, and the message will continue to display. 2. Make sure that the paper out flag is not stuck in the down position by rough media. Do this before opening the tray. To check this flag without opening Tray 2, remove the Duplexer if it is present. 3. Open the Front Access Door. This provides you with a clear view of the Tray 2 paper out sensor flag. To check this flag without opening Tray 3, use a flashlight to observe the paper out flag. If either paper flag is damaged, replace the paper flag or the paper input tray. If the printer is using Tray 2 or 3 and the message is accompanied by a clicking noise every few seconds, replace the Paper Input Unit Assembly. See Paper Input Unit (PIU) on page 314 for instructions.
`TRAY X LIFTING`	Error	Displays when tray X is in the process of lifting the paper to the top of the tray for proper feeding.	1. If the message does not go away, verify that the media can be pulled from another tray. 2. The Paper Input Unit may need to be replaced. See Paper Input Unit (PIU) on page 314 for instructions.
`TRAY XX LOAD [SIZE]`	Error	Tray X does not contain the specified size of paper.	Load the specified size of paper into Tray X.
`TRAY XX LOAD [SIZE]`	Error	Tray X does not contain the specified size of paper.	Load the requested paper into the indicated tray, or press SELECT to override the message and to print on a loaded paper size.

Table 7-5. Engine Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`TRAY xx LOAD [TYPE] [SIZE]`	Error	One of the following occurred: • There is no paper loaded in the specified tray, or the paper is not the size requested, or the control panel is not set for the size of paper loaded. • The tray is not properly adjusted for size. • The default paper size is set incorrectly. • If this message appears and the tray contains the correct size of paper, a sensor could be damaged or a paper sensor lever could be stuck.	1. Load the requested paper into the specified tray (x). Make sure that the trays are correctly adjusted for size. The tray type settings (and size for Tray 1) must be set from the printer's control panel. If you are trying to print A4 or letter size paper and this message appears, make sure that the default paper size is set correctly from the Printing Menu in the printer's control panel. 2. Press GO to print from the next available tray. 3. Press - VALUE + to scroll through the available types and sizes. 4. Press SELECT to accept the alternate type or size. 5. Inspect the switches in the tray. 6. Turn the printer on with the tray removed and push the switches by hand to see if they register.
`TRAY X OPEN`	Warning	The specified tray is open.	Close the tray to continue.
`UNSUPPORTED SIZE IN TRAY [YY]`	Error	An external paper handling device detected an unsupported paper size. The printer will go offline until the condition is corrected.	Load a supported paper size in the tray.
`USE [TYPE] [SIZE] INSTEAD?`	Error	If the requested paper size or type is not available, the printer asks if it should use another paper size or type instead.	1. Press - VALUE + to scroll through the available types and sizes. 2. Press SELECT to accept the alternate type or size.

Input Device Messages

2000-sheet Input Tray Error Messages

7/13/98   Koala Service Manual   5HCISens.cdr

Paper Exit Sensor (PS32)
Paper Tray Raised Sensor (PS34)
Paper Tray Empty Sensor (PS33)
Paper Entry Sensor (PS31)
Feed Roller
Pickup Roller
VTU Motor
Separation Roller
VTU Clutch (CL31)
VTU Closed Sensor (PS35)
Main Drive Clutch (CL32)
2000-sheet Input Tray Controller PCA
Main Motor (MT31)
LEDs
Paper Quantity Switches (SW601, SW602)
Normal/Diagnostic Mode Switch
Paper Size Switches (SW701 - SW704)
Power Supply

Table 7-6. 2000-sheet Input Tray Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
Input Device Condition 11.01	65.11.01	The detected tray is not consistent with the paper size specified by the Paper Handling Controller.	1. Make sure the size, source, and type of paper selected from the software configuration is correct. 2. Pull out Tray 4 to verify that the size and type of paper loaded matches to the size and type specified in the software configuration.

Table 7-6. 2000-sheet Input Tray Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
13.11 PAPER JAM IN INPUT DEVICE	13.11 11	Timeout at Entry sensor (PS31) on the 2000-sheet Input Tray	1. Open the Vertical Transfer Unit (VTU) and remove media. 2. Make sure that the ENTRY Sensor (PS31) can move freely. 3. Make sure that the three feed, separation, and pickup rollers are properly seated. 4. If the problem persists, open the VTU and override its Open/Close Door Sensor (PS35), perform a Paper Path Test feeding from the 2000-sheet Input Tray, and make sure the feed rollers are advancing the paper. If rollers do not rotate, verify the connections at the Pickup Assembly and the Controller PCA in the input device. 5. If the rollers rotate and drop down, but do not advance the paper, replace the feed and separation rollers using the maintenance kit. 6. If the rollers do not rotate or do not drop down, replace the Pickup Assembly. 7. If the problem persists, replace the Vertical Transfer Unit (VTU) where sensor (PS31) is located.
	13.11 1B	Timeout at Exit sensor (PS32) on the 2000-sheet Input Tray.	
	13.11 21	Page stays longer at Entry sensor (PS31) on the 2000-sheet Input Tray.	
	13.11 2B	Page stays longer at Exit sensor (PS32) on the 2000-sheet Input Tray.	
13.11 PAPER JAM IN INPUT DEVICE	13.11 31	At power on, Entry sensor (PS31) at the VTU is active.	1. Open the Vertical Transfer Unit (VTU) and remove media. 2. Verify that sensor (PS31 and PS32) moves freely. 3. If any of the sensors (PS31 or PS32) are damaged, replace the Vertical Transfer Unit (VTU).
13.11 PAPER JAM IN INPUT DEVICE	13.11 3B	At power on, Exit sensor (PS32) at the VTU is active.	1. Open the Vertical Transfer Unit (VTU) and remove media. 2. Verify that sensor (PS31 and PS32) moves freely. 3. If any of the sensors (PS31 or PS32) are damaged, replace the Vertical Transfer Unit (VTU).

Table 7-6. 2000-sheet Input Tray Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`66.11.01 INPUT DEVICE FAILURE`	66.11.01	Lifting motor malfunction.	1. Make sure there are no objects or fragments of paper in the free area at the 2000-sheet Input Tray (Tray 4). 2. Make sure that the lifting plate lifts up freely by hand. 3. Make sure that the paper size plates are installed correctly, and that they are not bent. 4. Replace the Paper Deck Drive Assembly's Bushing, if broken. 5. Replace the Paper Deck Drive Assembly. 6. Replace the 2000-sheet Input Tray's (Tray 4) paper tray.
`66.11.02 INPUT DEVICE FAILURE`	66.11.02	Feed motor malfunction.	1. Make sure there are no objects or fragments of paper in the free area at the 2000-sheet Input Tray (Tray 4). 2. Check Paper Tray Raised Sensor (PS34) that is working properly (perform a sensor test). 3. Check for proper installation of the Pick up roller. 4. Check the Pickup assembly and Paper Deck Drive Assembly cabling. 5. Replace the Pickup assembly or the Paper Deck Drive Assembly, if necessary.

Table 7-6. 2000-sheet Input Tray Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`66.11.03 INPUT DEVICE FAILURE`	66.11.03	Lifting and feed motor malfunction.	1. Make sure there are no objects or fragments of paper in the free area at the 2000-sheet Input Tray (Tray 4). 2. Make sure that the lifting plate lifts up freely by hand. 3. Make sure that the paper size plates are installed correctly, and they are not bent. 4. Check for broken Paper Deck Drive Assembly's Bushing, if so replace it. 5. Replace the Paper Deck Drive Assembly. 6. Check Paper Tray Raised Sensor (PS34) is working properly (perform a sensor test). 7. Check for proper installation of the Pickup roller. 8. Check Pickup Assembly cabling. 9. Replace the Pickup Assembly.

2 x 500-sheet Input Tray Error Messages

Upper cassette Paper Level Sensor 2 (PS1206)

Upper cassette Paper Level Sensor 1 (PS1205)

Registration Paper Sensor (PS1)

Paper Jam Sensor (PS2)

VTU Motor

VTU Clutch (CL31)

VTU Closed and Open Sensor (PS35)

Paper Size Switches (SW1601 - SW1604)

Upper cassette Paper out Sensor (PS1208)

Lower cassette Paper out Sensor (PS1207)

Lower cassette Sensor (PS1201)

Lower cassette Paper Level Sensor 2 (PS1204)

Lower cassette Paper Level Sensor 1 (PS1203)

2x500-sheet Input Tray Controller PCA

LEDs

Normal/Diagnostic Mode Switch

Power Supply

Table 7-7. 2 x 500-sheet Input Tray Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
Input Device Condition 11.01	65.11.01	The detected tray is not consistent with the paper size specified by Paper Handling Controller.	1. Make sure the size, source, and type of paper selected from the software configuration is correct. 2. Pull out tray 4 or 5 to verify that the size and type of paper loaded matches to the size and type specified in the software configuration.

Table 7-7. 2 x 500-sheet Input Tray Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
Input Device Condition 11.04	65.11.04	Lifter malfunction.	1. Make sure that the lifting plate lifts up freely by hand. 2. Make sure that the paper size plate is installed correctly, and is not bent or broken. 3. Replace the Paper Deck Drive Assembly's Bushing, if broken. 4. Replace the Paper Deck Drive Assembly. 5. Replace the 2 x 500-sheet Input Tray's corresponding paper tray.
Input Device Condition 11.06	65.11.06	Requested to feed more than 4 pages at a time.	1. Check for proper installation of the Pickup roller. 2. Check the Pickup assembly and the Paper Deck Drive Assembly cabling. 3. Replace the Pickup assembly or the Paper Deck Drive Assembly, if necessary.

Table 7-7. 2 x 500-sheet Input Tray Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
13.11 PAPER JAM IN INPUT DEVICE	13.11 11	Page did not arrive at entry sensor.	1. Open the Vertical Transfer Unit (VTU) and remove media. 2. Make sure that the ENTRY Sensor (PS1) can move freely. 3. Make sure that the three feed, separation, and pickup rollers are properly seated. 4. If the problem persists, open the VTU and override its Open/Close Door Sensor (PS35), perform a Paper Path Test feeding from the 2 x 500-sheet Input Tray, and make sure the feed rollers are advancing the paper. If rollers do not rotate, verify the connections at the Pickup Assembly and the Controller PCA in the input device. 5. If the rollers rotate and drop down, but do not advance the paper, replace the feed and separation rollers using the maintenance kit. 6. If the rollers do not rotate or do not drop down, replace the Pickup Assembly. 7. If the problem persists, Replace the Vertical Transfer Unit (VTU) where sensor (PS31) is located.
	13.11 1B	Page did not arrive to exit sensor.	
	13.11 21	Page stays longer at entry sensor.	
	13.11 2B	Page stays longer at exit sensor.	
13.11 PAPER JAM IN INPUT DEVICE	13.11 31	At power on, entry sensor is active.	1. Open the Vertical Transfer Unit (VTU) and remove media. 2. Verify that sensor (PS1 and PS2) moves freely. 3. If any of the sensors (PS1 or PS2) are damaged, replace the Vertical Transfer Unit (VTU).
13.11 PAPER JAM IN INPUT DEVICE	13.11 3B	At power on, exit sensor is active.	1. Open the Vertical Transfer Unit (VTU) and remove media. 2. Verify that sensor (PS1 and PS2) moves freely. 3. If any of the sensors (PS1 or PS2) are damaged, replace the Vertical Transfer Unit (VTU).

Envelope Feeder Error Messages

Table 7-8. Envelope Feeder Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
ENVELOPE FEEDER EMPTY	Warning	The envelope feeder is empty. Printing of the current job is not interrupted.	Refill the envelope feeder.
ENV FEEDER LOAD [SIZE]	Error	The envelope feeder does not have the requested paper.	Put the requested paper into the envelope feeder.
ENV FEEDER LOAD [TYPE] [SIZE]	Error	There is no envelope in the feeder, the wrong size is loaded in the feeder, or the type and size is set incorrectly in the control panel.	1. Load the requested envelope type and size into the envelope feeder. 2. Make sure that the envelope size and type are set correctly from the Paper Handling Menu in the printer's control panel. 3. Press GO if the desired envelope is already loaded in the feeder. 4. Press - VALUE + to scroll through the available types and sizes. 5. Press SELECT to accept the alternate type or size.
WRONG ENVELOPE FEEDER INSTALLED	Error	The envelope feeder you are trying to install will not work for this printer.	Install the correct envelope feeder.

Output Device Messages

7-bin Tabletop Mailbox Error Messages

Table 7-9. 7-bin Tabletop Mailbox Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.12` or `13.22` `PAPER JAM IN OUTPUT DEVICE`	13.12 01 or 13.22 01	Unexpected page at (ES) Entry Sensor.	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Entry Sensor (ES) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (ES) is working properly. 4. If a problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.
	13.12.11 or 13.22.11	Page did not reach the Entry Sensor (ES) on time.	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Entry Sensor (ES) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (ES) is working properly. 4. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.

Table 7-9. 7-bin Tabletop Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.12` or `13.22` `PAPER JAM IN OUTPUT DEVICE` (continued)	13.12 12 or 13.22 12	Page did not reach the Paper Path Sensor 1 (PPS1) on time.	1. Open the Paper Path Cover and remove any jammed paper. 2. Make sure that the Paper Path Sensor 1 (PPS1) moves freely. 3. Perform a sensor test to make sure that the Paper Path Sensor 1(PPS1) is working properly. 4. Replace the sensors PCA. 5. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA.
	13.12 15 or 13.22 15	Page did not reach the Paper Path Sensor 2 (PPS2) on time.	1. Open the Paper Path Cover and remove any jammed paper. 2. Make sure that the Paper Path Sensor 2 (PPS2) moves freely. 3. Perform a sensor test to make sure that the Paper Path Sensor 2 (PPS2) is working properly. 4. Replace the sensors PCA. 5. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA.
	13.12 17 or 13.22 17	Page did not reach the Face-up Delivery Sensor (FUDS) on time.	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Face-up Delivery Sensor (FUDS) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (FUDS) is working properly. 4. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.
	13.12 21 or 13.22 21	Page stays at Entry Sensor (ES).	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Entry Sensor (ES) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (ES) is working properly. 4. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.

Table 7-9. 7-bin Tabletop Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action

`13.12` or `13.22`
`PAPER JAM IN`
`OUTPUT DEVICE`
(continued)
	13.12 22 or 13.22 22	Page stays at Paper Path Sensor 1 (PPS1).	1. Open the Paper Path Cover and remove any jammed paper.
			2. Make sure that the Paper Path Sensor 1 (PPS1) moves freely.
			3. Perform a sensor test to make sure that the Paper Path Sensor 1(PPS1) is working properly.
			4. Replace the sensors PCA
			5. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA.

	13.12 25 or 13.22 25	Page stays at Paper Path Sensor 2 (PPS2).	1. Open the Paper Path Cover and remove any jammed paper. 2. Make sure that the Paper Path Sensor 2 (PPS2) moves freely. 3. Perform a sensor test to make sure that the Paper Path Sensor 2 (PPS2) is working properly. 4. Replace the sensors PCA. 5. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA.
	13.12 27 or 13.22 27	Page stays at Face-up Delivery Sensor (FUDS).	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Face-up Delivery Sensor (FUDS) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (FUDS) is working properly. 4. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.
	13.12 31 or 13.22 31	Page found at Entry Sensor (ES) during power on sequence.	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Entry Sensor (ES) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (ES) is working properly. 4. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.

Table 7-9. 7-bin Tabletop Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action

`13.12` or `13.22`
`PAPER JAM IN`
`OUTPUT DEVICE`
(continued)
	13.12 32 or
	13.22 32
		Page found at Paper Path Sensor 1 (PPS1) during power on sequence.	1. Open the Paper Path Cover and remove any jammed paper.
			2. Make sure that the Paper Path Sensor 1 (PPS1) moves freely.
			3. Perform a sensor test to make sure that the Paper Path Sensor 1(PPS1) is working properly.
			4. Replace the sensors PCA.
			5. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA.

	13.12 35 or 13.22 35	Page found at Paper Path Sensor 2 (PPS2) during power on sequence.	1. Open the Paper Path Cover and remove any jammed paper. 2. Make sure that the Paper Path Sensor 2 (PPS2) moves freely. 3. Perform a sensor test to make sure that the Paper Path Sensor 2 (PPS2) is working properly. 4. Replace the sensors PCA. 5. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA.
	13.12 37 or 13.22 37	Page found at Face-up Delivery Sensor (FUDS) during power on sequence.	1. Open the Top Cover and remove any jammed paper. 2. Make sure that the Face-up Delivery Sensor (FUDS) moves freely. 3. Perform a sensor test to make sure that the Entry Sensor (FUDS) is working properly. 4. If the problem persists, replace the 7-bin Tabletop Mailbox controller PCA. 5. Replace the sensors PCA.

`66.12.16` or
`66.22.16`
`OUTPUT DEVICE`
`FAILURE`
	66.12 16 or
	66.22.16
		Solenoid Malfunction.	1. Check that the 2 parallel black bars that are connected to the Diverter Solenoids (S3 and S4) have free movement.
			2. Check for proper installation of the C-link cables.
			3. Replace the C-link cables.
			4. Replace the 7-bin Tabletop Mailbox controller PCA.

Table 7-9. 7-bin Tabletop Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
66.12.32 or 66.22.32 OUTPUT DEVICE FAILURE	66.12 32 or 66.22.32	Solenoid Malfunction.	1. Check that the 2 parallel black bars that are connected to the Diverter Solenoids (S3 and S4) have free movement. 2. Check for proper installation of the C-link cables. 3. Replace the C-link cables. 4. Replace the 7-bin Tabletop Mailbox controller PCA.

8-bin Mailbox Error Messages

Left Output Bin
Full Sensor
(PSFaceFull)

Paper Entry
Sensor
(PSEntry)

Flipper Roller
Motor with
Encoder (M2)

Delivery Head
Motor (M1)

Paper Delivered
to Head Sensor
(PSExit1)

Delivery Rollers
Extended Sensor
(PSEject)

Interlock Switch
(SW1)

Delivery Head Roller
Motor (M3)

Paper Bin (below)
Full Sensor
(PSBinFull/
Head Position)

Paper Bin Empty
Sensor (PSBinEmpty)

Paper Delivered
to Bin Sensor
(PSExit 2)

Transport Belt
Motor (M5)

Reverse Stepper
Motor Sensor
(PSFaceUp)

Ejector Motor
(M4)

IR LED

Controller
PCA

Table 7-10. 8-bin Mailbox Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
22.1 or 12.1 OUTPUT DEVICE CONDITION	65.22.01 or 65.12.01	The Face-up Bin is too full.	1. Empty the Face-up Bin. 2. Check that sensor flag moves freely. (PSFaceFull.) 3. Check for proper cable connection in flipper area. 4. If the problem persists, replace the Flipper assembly.

Table 7-10. 8-bin Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
OUTPUT DEVICE CONDITION 22.2 or 12.2	65.22.02 or 65.12.02	Elevator Problem (Home not Found).	1. Check that the blind cover or scan bar is installed properly. 2. Check for jammed paper in the delivery head assembly. 3. Check for free movement of the delivery head assembly. 4. Check that all paper bins are seated correctly. 5. Check that paper bins or the blind cover are not broken. 6. Replace the delivery head motor. 7. Replace the MBM controller PCA. 8. Replace the delivery head assembly.
OUTPUT DEVICE CONDITION 22.3 or 12.3	65.22.03 or 65.12.03	Elevator Problem Scanning bins Error.	1. Check that the blind cover or scan bar is installed properly. 2. Check for jammed paper in the delivery head assembly. 3. Check for free movement of the delivery head assembly. 4. Check that all paper bins are seated correctly. 5. Check that there is no paper bin or blind cover broken. 6. If the error message persists, replace the delivery head motor (M1), the MBM controller PCA, or the Delivery Head Assembly.
OUTPUT DEVICE CONDITION 22.4 or 12.4	65.22.04 or 65.12.04	Slider Jam in the head assembly.	1. Perform a paper path test. 2. Check for damaged sensor (PSExit 1) or (PSExit 2) in the delivery head assembly. 3. Check fingers in the head assembly, they must be over the ejector rollers. 4. Replace the Head Assembly.

Table 7-10. 8-bin Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.22` or `13.12` `PAPER JAM IN` `OUTPUT DEVICE`	13.22 01 or 13.12 01	Flipper Entry Sensor (PSEntry) Jam.	1. Open the Jam Access Door and remove any jammed paper. 2. Make sure that the Full Bin Sensor Flag (PSFaceFull) moves freely. 3. Make sure that the Flipper's shaft is not out of place. 4. If the problem persists, replace Flipper Assembly. 5. Replace the MBM Controller PCA.
	13.22 02 or 13.12 02	Flipper Face-up Sensor (PSFaceup) Jam.	1. Open the Jam Access Door and remove any jammed paper. 2. Make sure that the Full Bin Sensor Flag (PSFaceFull) moves freely. 3. Make sure that the Flipper's shaft is not out of place. 4. If the problem persists, replace the Flipper Assembly. 5. Replace the MBM Controller PCA.
	13.22 03 or 13.12 03	Belt Jam (Transport Belt Motor (M5) stop for an unexpected reason).	1. Check for jammed paper at the double-belt system and Delivery Head Assembly. 2. Ensure free movement of the double belt (both belts). 3. Ensure parallel position of the double belt system. 4. Check that the Metal Tape is in place and in good condition. 5. Replace the Transport Belt Motor (M5). 6. Replace the MBM Controller PCA. 7. Replace the Delivery Head Assembly.

Table 7-10. 8-bin Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.22` or `13.12` `PAPER JAM IN` `OUTPUT DEVICE`	13.22 04 or 13.12 04	Jam in Head Assembly at (PSExit 1).	1. Check for jammed paper in the Delivery Head Assembly. 2. Ensure free movement in (PSExit 1) sensor flags on the delivery head assembly. 3. Check the delivery roller's fingers. They must be over the ejector rollers on the delivery head assembly. 4. Replace the flat ribbon cable that connects to the delivery head assembly to the controller PCA. 5. Replace the MBM Controller PCA. 6. Replace Delivery Head Assembly.
`13.22` or `13.12` `PAPER JAM IN` `OUTPUT DEVICE`	13.22 05 or 12.12 05	Jam in Head Assembly at (PSExit 2).	1. Check for jammed paper in the Delivery Head Assembly. 2. Ensure free movement in (PSExit 2) sensor flags on the delivery head assembly. 3. Check the delivery roller's fingers. They must be over the ejector rollers on the delivery head assembly. 4. Replace the flat ribbon cable that connects to the delivery head assembly to the controller PCA. 5. Replace the MBM Controller PCA. 6. Replace Delivery Head Assembly.

Table 7-10. 8-bin Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.22` or `13.12` `PAPER JAM IN` `OUTPUT DEVICE`	13.22 06 or 13.12 06	Elevator (Head Assembly) Jam when scanning and looking for home position.	1. Check for jammed paper in the delivery head assembly. 2. Check that the blind cover is properly installed. 3. Check that the Scan Bar (if stapler unit is installed) is properly seated. 4. Check for free movement of the delivery head assembly. 5. Check that all paper bins are seated correctly. 6. Check for broken paper bins, blind cover, or Scan Bar. 7. Replace the flat ribbon cable that connects to the delivery head assembly to the controller PCA. 8. Replace the delivery head motor (M1). 9. Replace the MBM controller PCA. 10. Replace the delivery head assembly.
`13.22` or `13.12` `PAPER JAM IN` `OUTPUT DEVICE`	13.22 0A or 13.12 0A	Communication problem. Wrong Page Request.	1. Make sure that all the C-link cables are properly installed and the connectors of this cables are tight enough. 2. Move the 8-bin Mailbox away from the Engine and resend the job. 3. Replace the C-link cables. 4. Perform a Power Cycle. 5. If the error condition persists, replace the Formatter board.
`66.12.08` or `66.22.08` `OUTPUT DEVICE` `FAILURE`	66.12.08 or 66.22 08	Flipper Motor Malfunction.	1. Check for jammed paper in the Flipper Assembly area. 2. Replace Flipper assembly. 3. Replace the MBM controller PCA.
`66.12.09` or `66.22.09` `OUTPUT DEVICE` `FAILURE`	66.12.09 or 66.22 09	External Memory Error.	Replace the MBM Controller PCA.

Table 7-10. 8-bin Mailbox Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`66.12.zz` or `66.22.zz` `OUTPUT DEVICE FAILURE`	66.12.zz or 66.12.zz	MBM C-link is not responding.	1. Check for proper installation of the C-link cables. 2. Replace the C-link cables. 3. Replace the 8-bin Mailbox controller PCA.

Note   For information on the 3,000-sheet Stapler/Stacker, see HP 3,000-sheet Stapler/Stacker Service Manual Supplement for Paper-Handling Accessories (C4788-90904).

Finisher Devices Messages

Stapler Error Messages

Table 7-11. Stapler Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
CHECK FINISHER DEVICE alternates with CLEAR JAM	Error	A stapler jam or a paper jam occurred.	1. Clear the paper from the stapler. 2. Open the top cover of the stapler and clear the stapler jam. 3. Resend the print job.
CHECK FINISHER DEVICE alternates with FINISHER ALIGN ERROR	Error	The paper is not aligned correctly in the stapler.	1. Remove the paper from the stapler. 2. Resend the print job.

Table 7-11. Stapler Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`FINISHER LOW ON FINISHING AGENT`	Warning	The finishing device is running out of finishing material.	Refill the finishing device.
`FINISHER OUT OF BINDING AGENT`	Error	The external paper handling finisher device is out of binding agent.	Refill the finishing device.
`STAPLER LOW ON STAPLES`	Warning	The stapler device is running out of staples.	Refill the stapler device.
`STAPLER OUT OF STAPLES`	Warning	The external paper handling stapler device is out of staples.	Refill the stapler device.
`TOO MANY PAGES IN JOB TO STAPLE`	Warning	The external paper handling stapler device received too many pages to staple. The pages will be ejected unstapled.	Staple the pages manually.
`13.23` or `13.33 PAPER JAM IN OUTPUT DEVICE`	13.33 0A	Staple Jam.	• Clear jammed staple. • Replace staple cartridge. • Replace Stapler Top Cover Assembly. • Replace Stapler Controller PCA.
	13.33 0B	Rack Jam.	• Remove jammed media. • Perform a device reset cycle by opening and closing the Stapler Top Cover. • Manually move the internal parts of the stapling unit looking for free movement. • Replace the Stapler Top Cover Assembly. • Replace the Stapler Controller PCA
	13.33 0C	Slider Jam.	• Remove jammed media. • Perform a device reset cycle by opening and closing the Stapler Top Cover. • Manually move the sliders looking for free movement and observe the power on sequence. • Replace the Stapling Bed Assembly • Replace the Stapler Controller PCA.

Table 7-11. Stapler Error Messages (continued)

Control Panel Message	Event Log Error Message	Description	Recommended Action
`13.23 or 13.33 PAPER JAM IN OUTPUT DEVICE`	13.33 0D	Retainer Jam.	• Remove jammed media. • Perform a device reset cycle by opening and closing the Stapler Top Cover. • If the problem persists replace the Stapling Bed Assembly.

Duplexer Error Messages

Reversing roller release plate — Duplex upper guide — Duplex feed roller 1 (Home position) — Duplex pick-up sensor lever — Duplex feed roller 2 — Reversing Unit — Reversing roller (CCW rotation) — Duplexing unit paper sensor
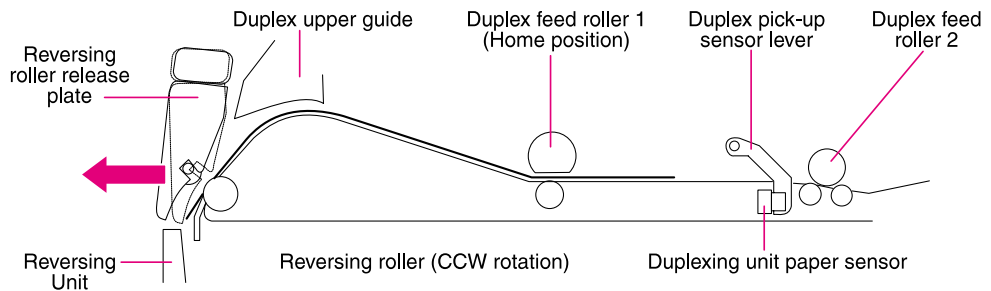
Table 7-12. Duplexer Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
13. 1	13.1 0B	Paper feed 1. Paper late jam. No page from Duplexer.	1. Open the front door, and remove any paper. 2. Open the right door, and remove any paper. 3. Remove any paper from the Duplexer. 4. Perform a Paper Path Test using the Duplexer. 5. Check that the sensors in the Duplexer have free movement. 6. If the problem persists, replace the entire Duplexer Unit.
	13.1 16	Paper feed 1. Paper late jam. Duplexer's 2nd sensor.	
	13.1 1F	Paper feed 1. Paper late jam. Duplexer's 2nd sensor.	
13.10	13.10 15	Duplex turn around. Paper late jam. Duplexer's 1st sensor.	
13.11	13.11 04	Duplex turn around. Paper stopped jam. Duplexer's 1st sensor.	
13.12	13.12 0D	Duplex path. Paper late jam. Duplexer's 2nd sensor.	
13.20	13.20 08	Could not automatically eject paper.	

Paper Handling Controller Error Messages

Table 7-13. Paper Handling Controller Error Messages

Control Panel Message	Event Log Error Message	Description	Recommended Action
66.00.zz SERVICE ERROR	66.00.01 through 66.00.65	A communication error occurred in the Paper Handling Controller or in the controller PCA of an external paper handling device.	1. Turn the printer off, and then turn the printer on. 2. Replace or exchange C-link cables. 3. If the problem persists, replace the PCA controller board for the input or output device. 4. If the problem persists, replace the Formatter PCA.
66.00.15 SERVICE ERROR	66.00.15	The Paper Handling Controller had a bad C-link (communication) cable. This error could be caused by a power failure.	1. Turn the printer off, and then turn the printer on. 2. If the problem persists, check the C-link and power cables. 3. If the problem persists, check the device power connector and power supply (internal or external). Replace if damaged. 4. If the problem persists, replace the PCA Controller board for the device. 5. If the problem persists, replace the Formatter PCA.
66.00.23 SERVICE ERROR	66.00.23	Error 66.00.23 is due to a bad C-link connection or a damaged C-link cable.	1. Turn the printer off, and then turn the printer on. 2. If the problem persists, replace the PCA Controller board for the input or output device. 3. If the problem persists, replace the Formatter PCA.

Step 4. Paper Path Troubleshooting

Paper jams occur in the printer when paper either does not reach or clear a photosensor along the printer's paper path in a specific amount of time. If a paper jam occurs, a `13.xx PAPER JAM` message is displayed on the printer's Control Panel. The following lists general questions you should ask and topics you should explore prior to troubleshooting:

Table 7-14. General Paper Path Troubleshooting Questions

Problem	Action
What is the frequency of the paper jams (e.g. continuous, one jam per 100 pages, one jam per 1000 pages, etc.)?	Verify with the customer. Print or display the Event Log to determine paper jam history. See Display on page 598 and Printer and Paper-Handling Devices Messages on page 604 and evaluate the Event Log.
Do paper jams only occur when the paper is fed from a particular paper input source (e.g., Tray 1, Tray 2, Tray 3, Tray 4, Tray 5, or Envelope Feeder)?	See Paper Jams on page 646 and use the Paper Path Test to isolate the problem.
Do jams only occur when paper is output to a specific output bin (e.g., Face-down bin, Face-up Bin, mailbox bin, duplex operation, stapler)?	Use Paper Path Test on page 648 to isolate the problem.
Do paper jams occur with a specific type of media?	Try known good media. See the *HP LaserJet Printer Family Print Media Guide*.
Where does the leading edge of the first sheet of paper in the printer's paper path stop when a jam occurs? Are any sheets of paper physically damaged or torn?	Attempt to duplicate. See Paper Path Test on page 648. Inspect the paper path and all paper path mechanical assemblies prior to the leading paper jam.

Table 7-14. General Paper Path Troubleshooting Questions (continued)

Problem	Action
Is the customer loading the paper trays correctly?	Observe the customer loading the paper. Do not fan the paper. See proper paper handling procedures in the *HP LaserJet Printer Family Print Media Guide*.
Is the customer overfilling the paper trays?	Make sure that the paper is NOT over the maximum fill marks in the paper trays. Observe the customer loading paper in the trays.
Are the paper tray guides set correctly?	Make sure that the Tray 2 and 3 left-side paper fence is set correctly at both the front and rear of the tray. Make sure that the front fence is locked into the correct position. For Tray 4, make sure that all adjustments are set correctly: front, back, and side at the top and bottom of the tray.
Does the printer need cleaning?	Inspect the paper path and paper path rollers. See Cleaning the Printer and Paper Handling Accessories on page 158.
When was the User Maintenance performed on the printer?	From the Configuration Page, determine the number of pages since the last maintenance (see figure 7-17 on page 654). The Printer Maintenance Kit should be installed every 350,000 images.

Paper Jams

Paper jams occur most often when:

- Paper trays are not correctly loaded. Make sure the paper is loaded with the arrow pointing up in Tray 1 and down in Trays 2, 3, 4, and 5.
- The print media does not meet the specifications listed in the *HP LaserJet Printer Family Print Media Guide*.
- The media is in poor condition.
- The printer needs cleaning.

The printer monitors the timing of four sensors to determine that a paper jam has occurred: PS2, PS1, PS1403, and PS1402.

If a paper jam occurs, the printer will display a `13.x PAPER JAM` message on the control panel. See "Printer Message Tables" on page 607 for detailed descriptions of the `13.x` messages and the recommended actions to resolve the errors.

Figure 7-14 shows the possible locations for most of the paper jams.
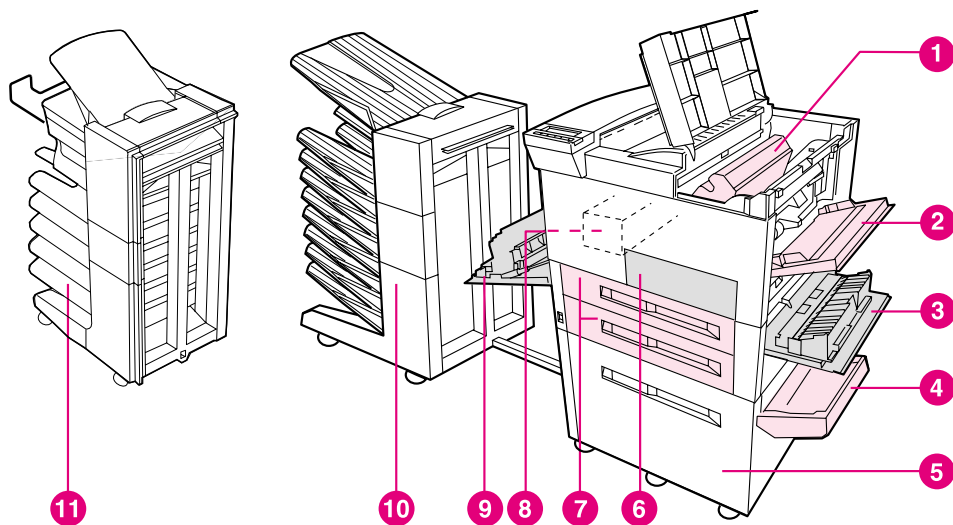
Figure 7-14   **Paper Path Jam Locations**

1	Toner cartridge area	**7**	Tray 2 and Tray 3
2	Tray 1 pickup roller and feed area	**8**	Fusing Assembly Area
3	Right door	**9**	Left door
4	Tray 4 (2000-sheet Input Tray) and Tray 5 (2 x 500-sheet Input Tray, not shown) transfer door	**10**	8-bin Mailbox 7-bin Tabletop Mailbox (not shown)
5	Tray 4 (2000-sheet Input Tray) and Tray 5 (2 x 500-sheet Input Tray, not shown)	**11**	5-bin Mailbox with Stapler
6	Front door		

Paper Path Test

Using the error trend information from Display on page 598, you can verify a specific printer paper path with the paper path test. You must first set the desired paper destination in the configuration menu and then select the paper path test. The paper path test menu will allow you to select the desired paper source and number.

Note Feeding paper from Tray 1 will not allow the user to send paper to the Face-down output bins during this test.

Note If the 8-bin Mailbox is installed, in order to perform the paper path test, the printer must be configured to mailbox mode. If the printer is not in mailbox mode, ask the network administrator to change the configuration to mailbox mode to complete this test.

To perform a paper path test:

1 Press MENU until INFORMATION MENU appears.

2 Press ITEM until PRINT PAPER PATH TEST appears.

3 Press SELECT.

4 Press **+** or **-** until the desired input tray appears.

5 Press SELECT.

6 Press **+** or **-** until the desired output bin appears.

7 Press SELECT.

8 Press **+** or **-** until the desired duplex mode appears.

9 Press SELECT.

10 Press **+** or **-** to choose the desired number of copies.

11 Press SELECT.
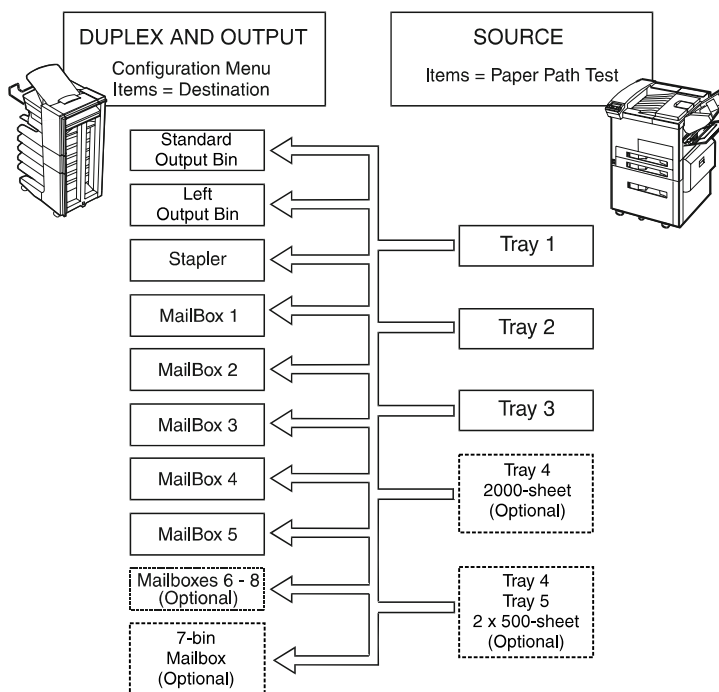
Figure 7-15   **Paper Path Test Source and Output Selection**

Customer Print Job

Ask the customer to send a print job from the problem source(s) to the problem destination(s). Try to recreate the paper jam errors by having the customer do typical print jobs and the type of print job that has been causing the paper jams.

When verifying print jobs, make sure that all of the settings are selected as desired. Keep in mind that application settings take priority over driver settings, which take priority over the printer control panel settings. If a single setting is not present in the application, but is set in the driver, that will override the front panel settings.

Note   JetAdmin does have capabilities to override paper types and sizes and certain conditions. See the *HP LaserJet 8100, 8100 N and 8100 DN Printers User Guide* for more information.

Clearing Paper Jams

Open and close all printer covers to clear the paper jam message. After removing a sheet of paper, you may need to check other areas to make sure that all paper has been removed.

All portions of a jammed piece of paper must be removed or you may run into repeated jams.

If the jam persists, try the following:

● If you have PostScript installed, use the `JAM RECOVERY=ON` menu item under the PostScript Menu. The printer will attempt to automatically recover from paper jams.

● Execute a formfeed from the computer or the printer's control panel. A formfeed may flush any paper or envelopes left in the printer.

● Check to make sure you have located and removed all scraps of paper from inside the printer.

● Use the Event Log Page and Event Log Codes to aid you in isolating where the errors are occurring.

Clearing Repeated Paper Jams

1 Check to see that media is correctly loaded in trays and that all width guides are correctly set (not skewed).

2 Try turning over the stack of paper in the tray. If you are using letterhead paper, try printing from Tray 1.

3 Do not use previously printed paper or torn, worn, or irregular paper.

4 Check the media specifications. If it is outside of the recommended specifications, problems may occur. (See the *HP LaserJet Printer Family Print Media Guide.)*

5 The printer may be dirty. Clean the printer as described in the first section of this chapter.

6 Check that paper loaded in Tray 1 is NOT longer than 17.7 inches (450 mm) or wider than 11.7 inches (297 mm). (These are the maximum dimensions that the printer can feed; otherwise the printer will jam.)

7 Make sure that Tray 4 and Tray 5 are set for the size of paper installed and that the tray is not overloaded with paper.

Step 5. Information Pages

From the printer's Control Panel you can print pages that give details about the printer and its current configuration. The following information pages are described:

- Menu Map (below)
- Event Log Pages (page 598)
- Configuration Pages (page 653)
- File Directory Page (page 656)
- Usage Page (page 657)

For a complete list of the printer's information pages, print a Menu Map and see the Information Menu.

Menu Map

To see the current settings for the menus and items available in the printer Control Panel, print a Control Panel Menu Map:

1 Press MENU until INFORMATION MENU appears.

2 Press ITEM until PRINT MENU MAP appears.

3 Press SELECT to print the Menu Map.

The content of the Menu Map varies, depending on the options currently installed in the printer. The printer driver or software application can override many of these values. See figure 7-16 on page 652 for a sample Menu Map.

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Figure 7-16 **Sample Menu Map**

Table 7-15. Key to Figure 7-16

Information Menu lets you print information pages and perform a paper path test.

Paper Handling Menu contains paper handling options.

Print Quality Menu lets you set print quality settings.

Printing Menu contains various print options.

Configuration Menu contains various printer settings.

I/O Menu contains communication settings.

Resets Menu shows options for resetting the printer.

Note Items will only appear if options are installed.

Configuration Pages

Use the configuration pages to view current printer and copy module settings, help troubleshoot printer problems, or verify installation of optional accessories, such as memory (DIMMs), paper trays, and printer languages.

To print a configuration page from the printer control panel:

1 Press MENU until INFORMATION MENU appears.

2 Press ITEM until PRINT CONFIGURATION appears.

3 Press SELECT to print the configuration page.

See figure 7-17 on page 654 for a sample configuration page. The content of the configuration page varies, depending on the options currently installed in the printer.

If any of the installed devices are not shown on the configuration page, verify that the C-link cabling is correctly connected and functional (figure 7-7 on page 583) and that DC power is available to the paper handling devices. Check and reseat suspect cable connections. If any of the cables are replaced, you must cycle the power to have the printer recognize the device again.

The Menu Map shows current control panel settings. See figure 7-16 on page 652 for a sample Menu Map. See chapter 3 for information about the default settings.

Printer Information
Lists the serial number, HP JetSend IP addresses, page counts, and other information for the printer.

Memory
Lists printer memory, PCL Driver Work Space (DWS), and I/O buffering and resource saving information.

Event Log
Lists the number of entries in the log, the maximum number of entries viewable, and the last three entries.

Security
Lists the status of the printer's Control Pane lock, Control Panel password, and disk drive.

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Installed Personalities and Options
Lists all printer languages that are installed (such as PCL and PS) and lists the options that are installed in each DIMM slot and EIO slot.

Paper Trays and Options
Lists the size settings for all the trays and lists the optional paper handling devices that are installed.

HP Toner Gauge
Indicates the amount of toner remaining in the cartridge. Must be reset at the Control Panel when a new cartridge is installed.
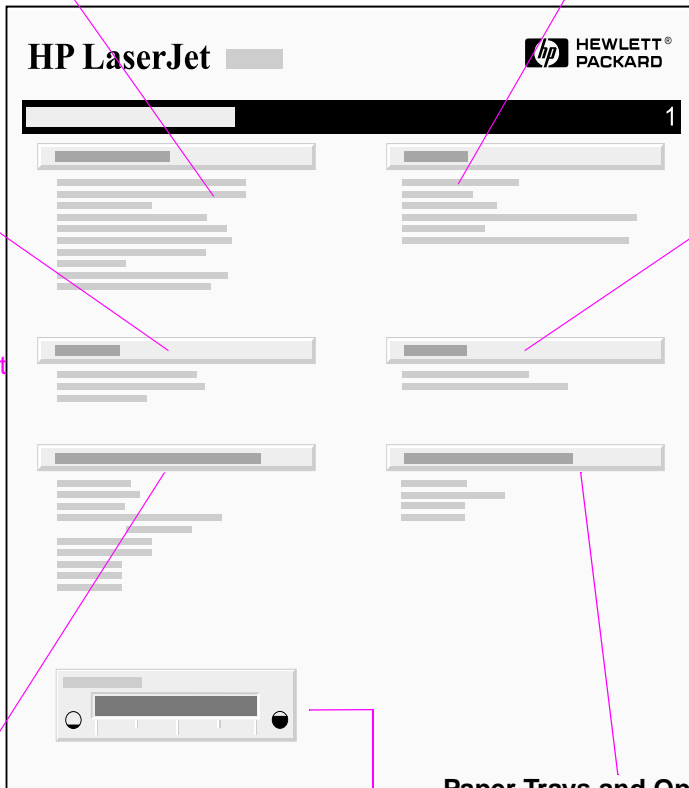
Figure 7-17   **Sample printer Configuration Page (1 of 2)**

General Information
Lists information about the EIO Copy Connect Card, model and serial number, firmware revision, and other information for the copy module.

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Cleaning Counter
Indicates number of scans since last cleaning. (Reset in service mode).

Usage Count Information
Indicates total ADF and flatbed scans.

Maintenance Counter
Indicates number of scans since the last time maintenance was performed. (Reset in service mode).
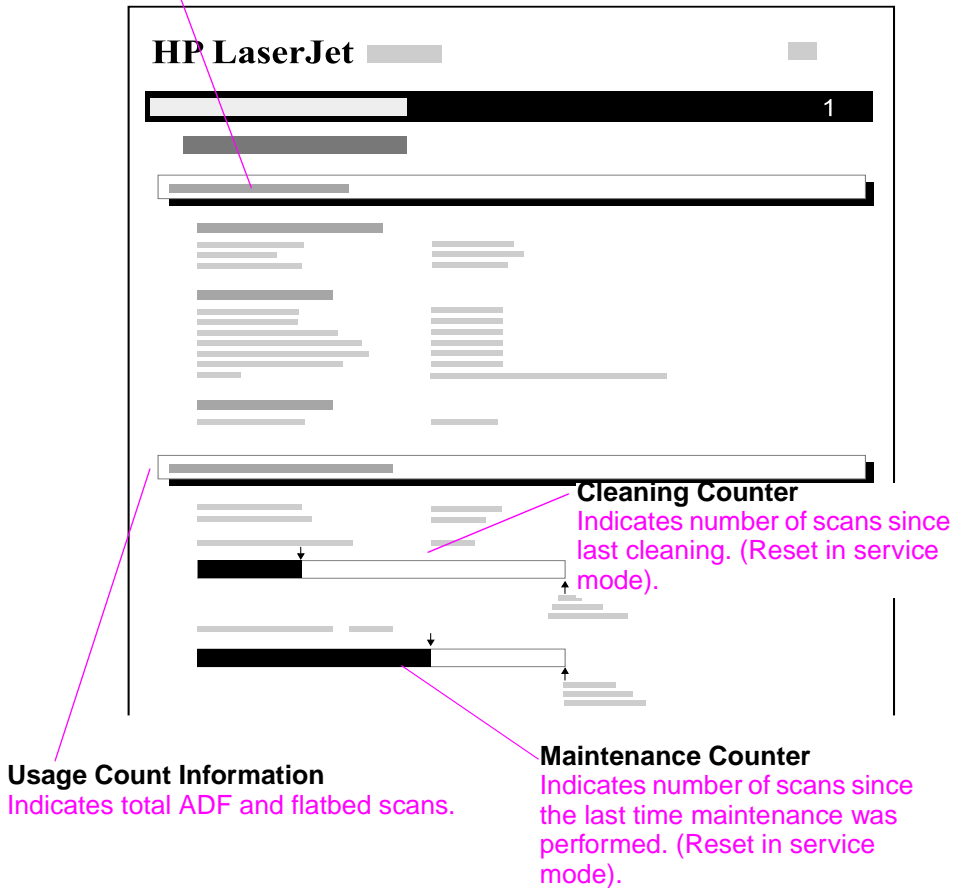
Figure 7-18   Sample Copy Module Configuration Page

File Directory Page

Print a file directory page to ensure the copy module firmware is loaded on the printer's hard disk drive.

To print a file directory page from the printer control panel:

1   Press MENU until INFORMATION MENU appears.

2   Press ITEM until PRINT FILE DIRECTORY appears.

3   Press SELECT to print the file directory page.
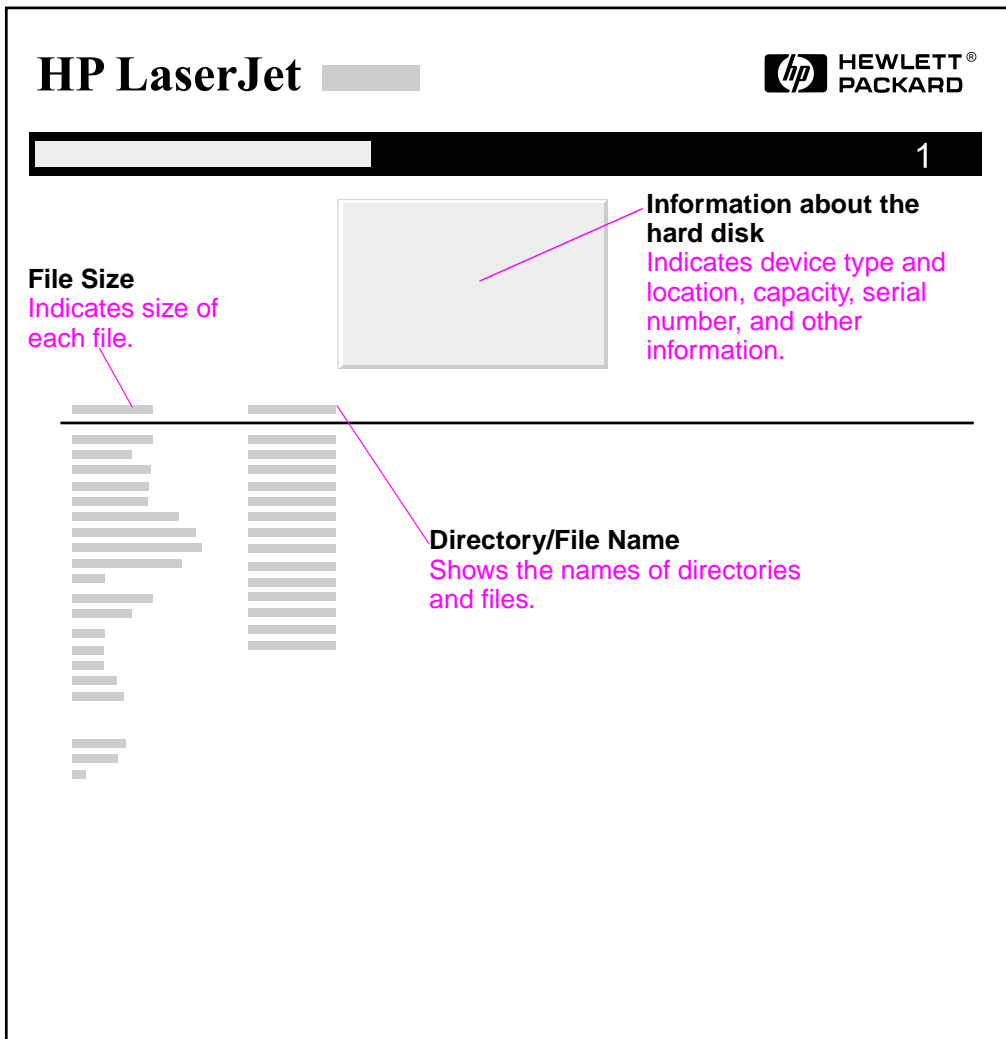
Figure 7-19   Sample File Directory Page

Usage Page

The usage page is designed to fit into a pay-per-page (PPP) model. A reseller can configure the usage page with instructions for a user to send the information back to the reseller in order to prepare bills.

Print a usage page from the printer control panel (or access the information remotely from Web JetAdmin) to determine how many simplex or duplex pages of each paper size have been scanned on the copy module and printed on the printer. Average toner coverage is approximated by counting pixels. Paper jams are not counted. The data cannot be reset manually and values such as total print and scan impressions, toner coverage, serial number, default language and default paper size are backed up between the printer's NVRAM and hard disk.

To print a usage page from the printer control panel:

1   Press MENU until INFORMATION MENU appears.

2   Press ITEM until PRINT USAGE PAGE appears.

3   Press SELECT to print the usage page.
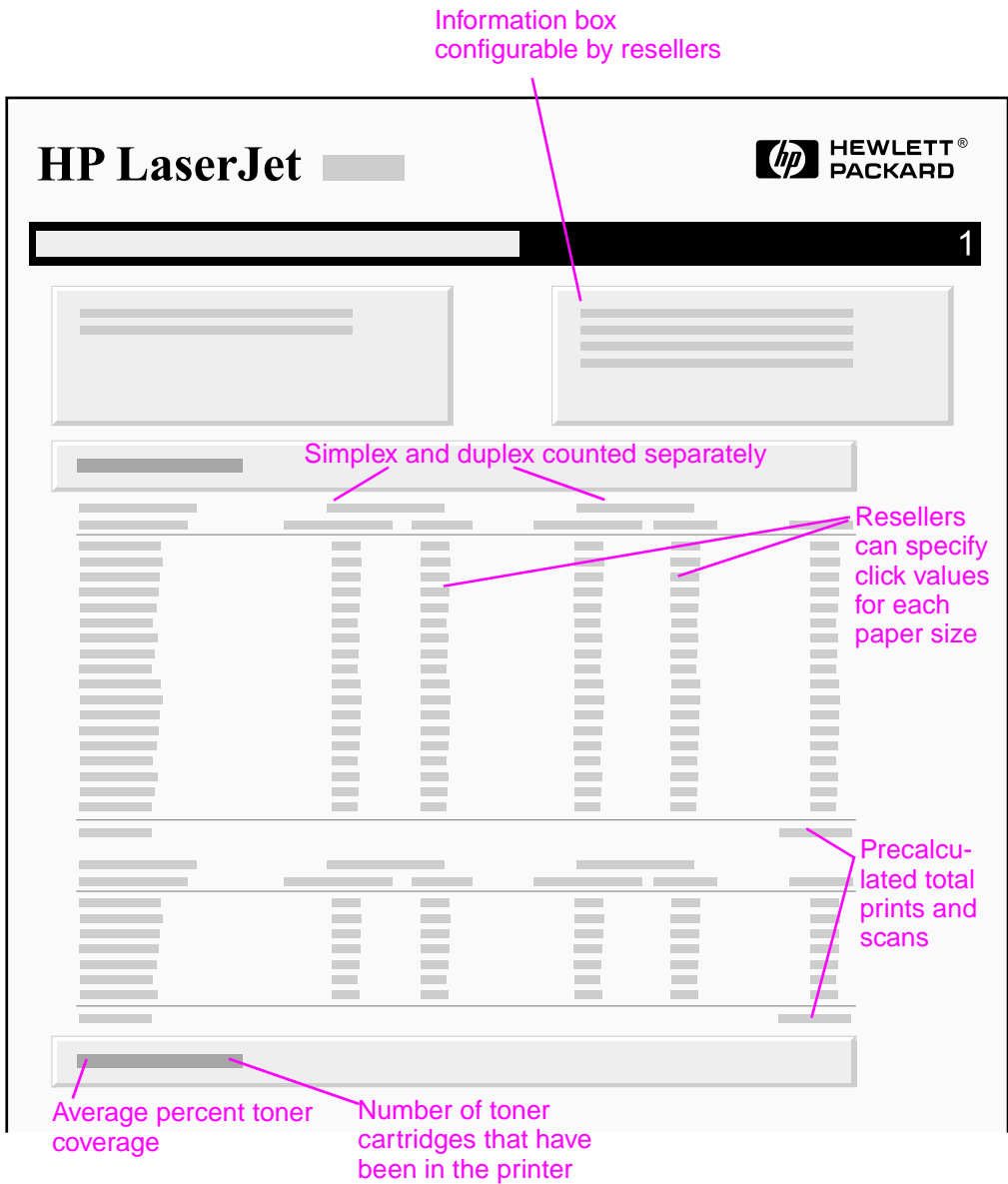
Figure 7-20   Sample Usage Page

Verify Installed Options

In the Installed Personalities and Options section on the configuration page, look for options such as hard disk information and DIMM types RAM or ROM and sizes.

Verify that the options installed in the printer are reflected in the configuration page. If an installed device is not shown on the configuration page, see table 7-16 on page 660 for recommended actions.

The Paper Tray and Options section of the configuration page identifies two types of paper handling devices that communicate or interact with the printer:

● Engine DC controller-driven devices

• Duplexer

• Envelope Feeder

● Communication Link Devices (C-link protocol)

• **Input devices:**
2000-sheet Input Tray
2 x 500-sheet Input Tray

• **Output devices:**
8-bin Mailbox
5-bin Mailbox with Stapler (includes a finisher)
7-bin Tabletop Mailbox
3,000-sheet Stapler/Stacker

While the engine DC controller-driven devices draw power (24V DC) and control signals from the engine, the C-link devices have their own power supply and controller board.

The information from the Paper Handling Controller is carried by the C-link cables that connect the controller board of all the C-link protocol supported devices. The C-link protocol supports up to 5 devices connected to the paper handling controller in a daisy chain. Each device controller has an input or output port that provides flexible connections in different configurations. However, it is recommended to use the configuration shown in figure 7-7 on page 583 to avoid rearrangements in the supported device numbering and confusions when evaluating the Event Log.

Table 7-16. Printer Devices Troubleshooting

Device	Action if installed and not detected
Duplexer	Turn the power off, reseat the Duplexer, verify that the connector is not broken, and turn the printer on. If the connector is broken or turning the printer on and off does not work, then replace the duplex cable and/or duplexer.
Envelope Feeder	Turn the power off, reseat the envelope feeder, and turn the printer on. If this does not work, replace the envelope feeder.
Device 1 2000-sheet Input Tray Device 2 8-bin Mailbox Device 3 Stapler	Verify that the C-link cables are installed correctly (see figure 7-7 on page 583). Remove all C-link connections and visually inspect for connector damage on the cable pins and connector ends. Try using a different cable to connect the problem device directly to the Paper Handling Controller. All C-link cables are wired the same, but are different lengths. If a device is not recognized, replace the device controller or defective C-link cable.
Device 1 2 x 500-sheet and 2000-sheet Input Tray	Verify that AC power is present in the 2000-sheet or 2 x 500-sheet Input Tray. Verify that the C-link cable is connected properly to the Paper Handling Controller or the tray will not lift.
Device 2 7-bin Tabletop Mailbox	Verify that the DC power supply is receiving power. Verify that the DC power supply output is connected to the 8-bin Mailbox controller. Verify that the C-link cables are properly installed and external power applied. Check if Fuse F202 in the 2 x 500-sheet or 2000-sheet Input Tray's Controller PCA is blown. Replace the DC power supply. Replace the 8-bin Mailbox controller.

Step 6. Image Quality

When you are working with customers, obtain a print sample before you begin troubleshooting their printer. Ask the customer to explain the quality they expect from the printer. The print sample will also help clarify the customer's explanation and expectations.

Table 7-17. Image Quality

Problem	Action
1. Do you have a print sample?	Obtain a print sample from the customer.
2. Does the problem repeat on the page?	Use the Repetitive Defect Ruler in figure 7-21 on page 677.
3. Is the toner cartridge full and is it manufactured by HP?	Check the toner cartridge using the check list on page 662.
4. Is the printer clean?	Perform the cleaning procedure described in Cleaning the Printer and Paper Handling Accessories on page 158.
5. Is the customer using print media that meets all HP paper specification standards?	For more information about HP's paper specification standards, see Paper Capacities and Sizes on page 50 and the *HP LaserJet Family Paper Specification Guide*.
6. Is the print sample similar to those in the Image Quality Tables on page 663?	Compare and perform the actions recommended in Image Quality Tables on page 663.
7. Is the problem on the drum or transfer roller?	Perform the steps in Half Self Test Functional Check on page 678 to determine where the defect is. If the defect is on the drum, replace the toner cartridge. If it is not on the drum, replace the transfer roller.

Check the Toner Cartridge

Image formation defects are often the result of toner cartridge problems. If there is any doubt, always replace the toner cartridge before troubleshooting image defects.

Use the following check list to make sure that the toner cartridge is still operable.

- Make sure that the toner cartridge has toner.
  Full toner cartridge weight = 3200 grams (114 oz)
  Empty weight = 2200 grams (80.5 oz)

- Check the expiration date of the toner cartridge (stamped on the cartridge box).

- Check the toner cartridge to see if it has been disassembled or refilled.

- Make sure that the toner cartridge is seated properly in the printer cavity.

- Inspect the cartridge for toner leaking through worn seals. (If the drum has been manually rotated it may have caused internal damage and toner spills may result.)

Note   Toner cartridges are rated for 20,000 images at 5% coverage. It is possible to wear out the gears and the cartridge seals before `TONER LOW` is displayed if the 20,000 image expectancy is exceeded.

- Check the surface of the photosensitive drum in the toner cartridge to see if it has been damaged or scratched. Touching the drum will contaminate the photosensitive surface and may cause spotting and defects during printing.

- White areas on the page may indicate that the drum has been exposed to light for too long. If white areas appear, stop the printer and wait a few minutes. This should eliminate most defective images. If not, the toner cartridge may be placed in a dark environment for several days, which may restore some life to the drum.

Image Quality Tables

Table 7-18. Blank (White) Page

Possible Cause	Recommended Action
OCCASIONAL BLANK PAGES:	
1. Software Configuration.	Make sure that the application software is not sending incorrect page length requests, or extra page eject commands.
2. Network Configuration. Some sharing devices on networks may generate a blank page as a separator.	Check with the network administrator.
3. Multiple Feeds. The printer may be feeding two or more pages at once because the paper is difficult to separate.	Remove the paper from the tray and bend the stack to separate the pages (see the *HP LaserJet Printer Family Print Media Guide*).
ALL PAGES BLANK:	
1. Sealing tape left in toner cartridge.	Remove the sealing tape.
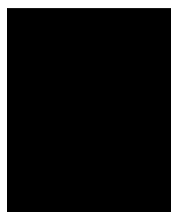
Table 7-19. Black Pages

Possible Cause	Recommended Action
1. Defective toner cartridge.	Replace the toner cartridge.
2. Light is leaking into the printer.	Make sure that all covers are in place.
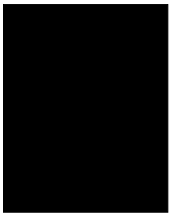
Table 7-19. Black Pages (continued)

Possible Cause	Recommended Action
3. High voltage contact springs are dirty or defective. The high voltage contacts are mounted on the High Voltage Power Supply PCA and protrude into the toner cartridge cavity.	Inspect and clean the high voltage contacts. If damaged, replace the High Voltage Power Supply PCA. See High Voltage Power Supply (HVPS) on page 323 for instructions.
4. High voltage power supply circuit is defective (not supplying the correct negative voltage).	Replace the High Voltage Power Supply PCA. See High Voltage Power Supply (HVPS) on page 323 for instructions.
5. DC Controller PCA is defective. If the DC Controller turns on the laser beam continuously, the entire surface of the Photosensitive drum is neutralized causing a completely black page.	Replace the DC Controller PCA. See PCA, DC Controller on page 315 for instructions.
6. Laser/Scanner Assembly is faulty (turning laser on continuously).	Replace the Laser/Scanner Assembly. See Laser/Scanner Assembly on page 308 for instructions.
7. Connectors between the Laser/Scanner unit and DC Controller are not seated properly or are defective.	Inspect and reseat the connectors. Replace cables as necessary.

Table 7-20. Fading Print

AaBbCc
AaBbCc
AaBbCc
AaBbCc
AaBbCc

Possible Cause	Recommended Action
1. Toner supply is low.	Shake the cartridge gently to redistribute the toner, or replace the cartridge.
2. Print Density is set incorrectly.	Change to a darker setting and retry printing.

AaBbCc
AaBbCc
AaBbCc
AaBbCc
AaBbCc
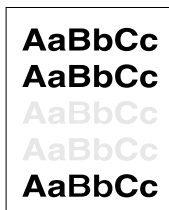
Table 7-20. Fading Print (continued)

Possible Cause	Recommended Action
3. EconoMode is on. EconoMode saves toner by reducing the dot density. This may appear to be a print quality problem in some cases.	Turn EconoMode off. Verify that EconoMode is not being enabled by either the printer driver or the job application.
4. Paper does not meet specifications. The moisture content, conductivity, or surface finish may not work correctly with the electrophotographic process.	Try a different paper lot (see *HP LaserJet Printer Family Print Media Guide*).
5. Transfer Roller is defective or incorrectly installed. If the Transfer Roller loses conductivity, it cannot effectively pull toner from the drum to the paper.	Inspect the Transfer Roller for proper installation and contact. If the Transfer Roller is damaged, replace it. See Transfer Roller Assembly on page 337 for instructions.
6. Laser/Scanner door is not opening properly.	1. Remove and reseat the toner cartridge. 2. Check the Laser/Scanner shutter door for proper operation. If defective, replace the Laser/Scanner Assembly. See Laser/Scanner Assembly on page 308 for instructions.
7. High voltage contact springs are dirty or defective. The high voltage contacts are mounted on the High Voltage Power Supply PCA and protrude into the toner cartridge cavity.	Check the contacts for functionality. If damaged, replace the High Voltage Power Supply PCA. See High Voltage Power Supply (HVPS) on page 323 for instructions.
8. High Voltage Power Supply PCA is defective.	Replace the High Voltage Power Supply PCA. See High Voltage Power Supply (HVPS) on page 323 for instructions.
9. DC Controller PCA is defective. The DC Controller supplies the proper voltage to the High Voltage Power Supply PCA.	Replace the DC Controller PCA. See PCA, DC Controller on page 315 for instructions.

Table 7-21. Dropout

Possible Cause	Recommended Action
1. Single sheet of paper is defective.	Try reprinting the job.
2. Paper does not meet specifications. The moisture content, conductivity, or surface finish may not work correctly with the electrophotographic process.	Try a different paper lot (see *HP LaserJet Printer Family Print Media Guide*).
3. DC Controller is defective (low primary voltage).	Replace the DC Controller. See PCA, DC Controller on page 315 for instructions.
4. High Voltage Power Supply PCA is defective.	Replace the High Voltage Power Supply PCA. See High Voltage Power Supply (HVPS) on page 323 for instructions.
5. Transfer Roller is defective.	Replace the Transfer Roller. See Transfer Roller Assembly on page 337 for instructions.
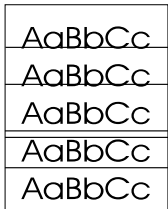
Table 7-22. Black Lines (parallel or perpendicular to path)

Possible Cause	Recommended Action
1. Toner cartridge is not seated properly.	Remove the cartridge and reinsert it.
2. Toner cartridge is damaged.	Inspect the toner cartridge for a scratched or streaked photosensitive drum. Clean the printer (see Cleaning the Printer and Paper Handling Accessories on page 158), and replace the cartridge.
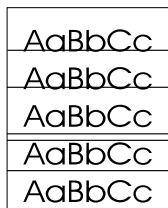
Table 7-22. Black Lines (parallel or perpendicular to path)

Possible Cause	Recommended Action
3. Fusing Assembly is contaminated or damaged.	Inspect the Fusing Assembly for toner build-up or scratches on the fuser rollers. Replace the Fusing Assembly if damaged. See Fusing Assembly on page 306 for instructions.
4. Static Eliminator Strip teeth are contaminated or defective.	Clean using compressed air. Be careful not to spray the Transfer Roller.
5. Repetitive defect. If the lines are repeated at a consistent interval down the page, this is a repetitive defect.	See the Repetitive Image Defect Ruler (figure 7-21 on page 677).

Table 7-23. Toner Smear

Possible Cause	Recommended Action
1. Paper does not meet specifications. The moisture content, conductivity, or surface finish of the media being printed may not work correctly with the electrophotographic process.	Try a different paper lot or other media (see *HP LaserJet Printer Family Print Media Guide*).
2. Fusing Rollers are dirty. Toner build-up can cause the print on a page to smear.	Remove and inspect the Fusing Assembly for excessive toner build-up.
3. The Static Eliminator Strip is dirty or is not grounded, allowing a static charge to remain on the page.	Clean the Anti-Static Brush using compressed air.

Table 7-23. Toner Smear (continued)

Possible Cause	Recommended Action
4. Fusing Assembly is defective. The print will smear if the Fusing Assembly is not heated sufficiently to bond the toner image to the paper.	Replace the Fusing Assembly. See Fusing Assembly on page 306 for instructions. Try changing fuser modes depending on the type of media used.
5. DC Controller is defective. The DC Controller regulates fusing roller temperature.	If a new Fusing Assembly does not resolve the problem, replace the DC Controller PCA. See PCA, DC Controller on page 315 for instructions.

Table 7-24. Background Scatter

Possible Cause	Recommended Action
Random Background Scatter	
1. Paper does not meet specifications. The moisture content, conductivity or surface finish may not work correctly with the electrophotographic process.	Try a different media or paper lot (see *HP LaserJet Printer Family Print Media Guide*).
2. Inside of printer is dirty (toner may have leaked out of the toner cartridge).	Clean inside of printer (see Cleaning the Printer and Paper Handling Accessories on page 158). Install a new toner cartridge if leaking.
3. Printing on envelope seams. Printing on an envelope seam can cause a background scatter problem.	Move the text to an area without seams. If not printing on seams, try a higher print density setting (see item 6, below).
4. Toner cartridge is defective.	Install a new toner cartridge.

Table 7-24. Background Scatter (continued)

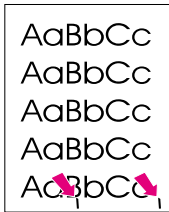| Possible Cause	Recommended Action
5. Transfer Roller is dirty or worn. A worn Transfer Roller can cause background scatter due to improper bias voltages.	Clean the Transfer Roller using a dry, lint-free cloth. DO NOT touch the Transfer Roller with your fingers. If the problem persists, replace the Transfer Roller Assembly. See Transfer Roller Assembly on page 337 for instructions.
6. Print Density is set too low, causing background scatter, particularly with envelopes and heavier papers.	Adjust the print density to a higher setting.

Background Scatter at Leading Edge Only (Leading Edge Halo)

Possible Cause	Recommended Action
1. Toner buildup in the Fuser Inlet Guide.	Clean Fuser Inlet Guide. See Cleaning the Printer and Paper Handling Accessories on page 158 for instructions.
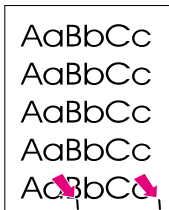
Table 7-25. Repetitive Defects

Possible Cause	Recommended Action
1. Toner cartridge is damaged. If the defect repeats at any of the following intervals and in the direction of paper movement, it is associated with a component inside the toner cartridge. See figure 7-21 on page 677.	Inspect the drum for scratches or damage. Replace the toner cartridge. Use the Repetitive Defect Ruler, figure 7-21 on page 677.
2. Transfer Roller has toner on it. If defects occur on the back of the page at intervals of 54mm (2.3 inches), the Transfer Roller may be dirty. This problem sometimes corrects itself after a few pages.	Clean the Transfer Roller using a dry, lint-free cloth. DO NOT touch the Transfer Roller with your fingers. If the problem persists, replace the Transfer Roller Assembly. See Transfer Roller Assembly on page 337 for instructions.

Table 7-25. Repetitive Defects (continued)

Possible Cause	Recommended Action
3. Rollers are dirty. Any dirty roller in the paper path may result in a repetitive print defect.	Examine and clean the rollers in the paper path. See Cleaning the Printer and Paper Handling Accessories on page 158.
4. Fusing Assembly is dirty or defective.	Print a cleaning page. If the problem persists, replace the Fusing Assembly. See Fusing Assembly on page 306 for instructions.
5. Gears are worn, causing slippage or jumping.	Inspect the gears driving the toner cartridge and the Fuser. Replace the Main Drive Assembly if necessary. See Main Gear Assembly on page 310 for instructions.
6. Paper does not meet specifications. The surface of the paper may be too coarse, causing repeated marks.	Try a different media or paper lot (see *HP LaserJet Printer Family Print Media Guide*).

Table 7-26. Line at Edge of Paper

Possible Cause	Recommended Action
Toner cartridge is defective. The photosensitive drum is wearing out. The line will grow wider, with cross-hatching. Shaking the cartridge does not relieve the problem.	Replace the toner cartridge.
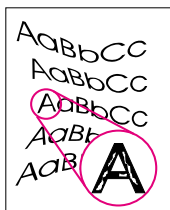
Table 7-27. Misshapen Characters, Voids

Possible Cause	Recommended Action
1. Paper surface too rough. Toner migrates to low spots, leaving higher areas void.	Turn EconoMode off. Use paper with correct finish (smoothness) (see *HP LaserJet Printer Family Print Media Guide*).
2. Printing on wrong side of paper. The label on the ream of paper indicates which side to print on. The different surface properties of some papers may cause problems if loaded wrong side up.	Turn EconoMode off. Check for the arrow on the paper wrapper. Be sure paper is loaded with the arrow pointing up in Tray 1 or down in Trays 2, 3, 4, and 5.
3. Paper surface is too smooth for proper toner adhesion.	Turn EconoMode off. Use paper with correct finish (smoothness) (see *HP LaserJet Printer Family Print Media Guide*).
4. Transparencies are bad. Transparencies can have this problem because they are not designed for proper toner adhesion.	Turn EconoMode off. Use Hewlett-Packard approved transparencies (see *HP LaserJet Printer Family Print Media Guide*).
5. Transfer Roller is bad. If the Transfer Roller has finger oils on its surface, is dirty, or is worn-out, this problem can result.	Turn EconoMode off. Clean the Transfer Roller using a dry, lint-free cloth. DO NOT touch the Transfer Roller with your fingers. If the problem persists, replace the Transfer Roller Assembly. See Transfer Roller Assembly on page 337 for instructions.
6. Laser/Scanner Assembly is bad.	Replace the Laser/Scanner Assembly. See Laser/Scanner Assembly on page 308 for instructions.

aBbCc
aBbCc
aBbCc
aBbCc
aBbCc
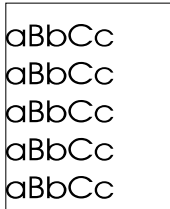
Table 7-28. Faulty Registration

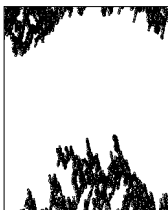| Possible Cause	Recommended Action
1. Paper tray is overloaded. If the tray is overloaded, the Pickup Rollers may not pick correctly.	Reload proper amount of paper squarely in the tray. Review paper loading with the customer.
2. Paper guide on the paper tray is incorrectly adjusted. If the guide is pushing too tightly against the paper, it may be delayed in being pulled into the printer. If the guide is too loose, it may cause image skewing.	Make sure that the paper guide is adjusted for the correct paper size and is locked into position.
3. Paper does not meet specifications. The surface of the paper may be too smooth for the Pickup and Feed Rollers to correctly feed paper into the printer.	Try a different paper lot (see *HP LaserJet Printer Family Print Media Guide*).
4. Drive gears are worn or broken. If any gear within the drive train or paper path becomes excessively worn or dirty, erratic paper movement can result.	Replace the defective gear or Main Drive assembly. See Main Gear Assembly on page 310 for instructions.
5. Worn Pickup or Registration Rollers. Paper is not being picked up consistently.	Inspect all paper path rollers, looking for wear, cracks, or glazing. Replace the worn rollers.

AaBbCc
AaBbCc
AaBbCc
AaBbCc
AaBbCc
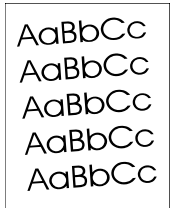
Table 7-29. Image Skew

Possible Cause	Recommended Action
1. Paper is loaded incorrectly. If the paper is not installed flush into the paper tray, a skewing problem will result.	Remove paper from the tray, and install paper correctly. Position the paper guide correctly for the paper size being used.
2. Paper size adjustment levers are missing or installed incorrectly.	Verify and correct.
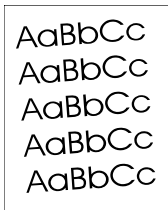
Table 7-29. Image Skew (continued)

Possible Cause	Recommended Action
3. Paper lot is bad. Paper that is manufactured poorly or inconsistently or that has too smooth or too rough a surface texture can cause an image skew problem.	Try a different paper lot (see *HP LaserJet Printer Family Print Media Guide*).
4. Pickup and/or Registration Rollers are worn. Paper is not being picked up consistently.	Inspect all paper path rollers, looking for wear, cracks, or glazing. Replace the worn rollers.

Table 7-30. Bubble Print

Possible Cause	Recommended Action
1. Photosensitive drum inside toner cartridge is not grounded.	1. Check for proper mounting of the High Voltage Power Supply (HVPW) and the HVPS ground contacts on the toner cartridge. 2. Check for proper seating of toner cartridge. 3. Replace the toner cartridge.
2. Toner cartridge is leaking.	Replace the toner cartridge.
3. Paper does not meet specifications. The moisture content, conductivity, or surface finish may not work correctly with the electrophotographic process.	Try a different paper lot (see *HP LaserJet Printer Family Print Media Guide*).
4. High Voltage Power Supply is defective.	Replace the High Voltage Power Supply. See High Voltage Power Supply (HVPS) on page 323 for instructions.
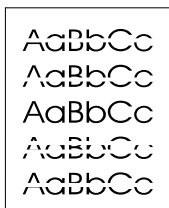
Table 7-31. White Stripes Parallel to Path

Possible Cause	Recommended Action
1. Toner cartridge is nearly empty. This can cause uneven toner distribution.	Remove the toner cartridge, and shake it gently. The cartridge will soon require replacement.
2. Toner cartridge has been exposed to too much light.	Store the toner cartridge in a darkened environment for several days. This may restore the photosensitive potential.
3. Foreign objects in beam path. Any foreign objects will block the light from developing an image on the Photosensitive drum.	Remove the toner cartridge, and check for damage. Replace the toner cartridge if it is damaged. Remove the printer cover, and inspect the path from the Laser/ Scanner to the toner cartridge drum, looking for foreign objects in the beam path.
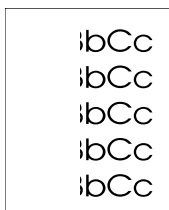
Table 7-32. Partial Blank Page

Possible Cause	Recommended Action
1. Page is too complex. The printer cannot create the image fast enough to keep pace with the print engine.	Set Page Protect to on or auto. Simplify print job.
2. Not enough memory. The page is too complex for standard printer memory.	Add printer memory. See Memory and Personality Upgrade on page 258 for instructions. As an alternative, simplify the print job.
3. Printing on legal-size paper from Tray 4 when software is specifying letter size (this will also cause paper jams).	Review software selection. Make sure that printing is on selected size.

Table 7-33. Compressed Print

Possible Cause	Recommended Action
1. Toner cartridge bushings are too tight. This may occur on refilled toner cartridges.	Replace the toner cartridge.
2. Gear is broken or worn.	Inspect and replace the worn gear or assembly.
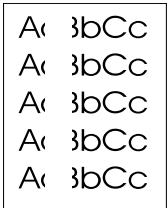
Table 7-34. Blank Portion in the Middle of the Page (Tray 4 Input only)

Possible Cause	Recommended Action
1. Bad clutch in vertical transfer door.	Replace the Tray 4 vertical transfer door.
2. Bad clutch in paper pickup assembly.	Replace Tray 4 paper pickup assembly.

Repetitive Defect Ruler

Repetitive print defects are usually associated with a specific roller within the printer or the toner cartridge. Use figure 7-21 to isolate the cause of repetitive print defects. Align the first occurrence of the defect with the top of the "ruler" and measure to the next occurrence of the defect to determine the roller in question. When you are certain that your defect pattern matches the pattern of the ruler, replace the indicated roller.

First occurrence of print defect ⎯⎯⎯⎯⎯⎯⎯⎯⎯→

Registration Roller 44 mm (1.73 in.) ⎯⎯⎯⎯
Toner Cartridge Primary Charging Roller 44.4 mm (1.75 in.) ⎯
Face-Up Delivery Roller 47 mm (1.86 in.) ⎯⎯⎯⎯⎯→
Toner Cartridge Developing Roller 53.5 mm (2.11 in.) ⎯⎯⎯→
Transfer Roller 54 mm (2.13 in.) ⎯⎯⎯⎯

Pickup Feed Roller, Separation Roller 75 mm (2.93 in.) ⎯⎯⎯→

Toner Cartridge Photosensitive Drum 94 mm (3.71 in.) ⎯⎯⎯→
Fuser Lower Roller 100 mm (3.94 in.) ⎯⎯⎯⎯⎯→

Fuser Upper Roller 141 mm (5.55 in.) ⎯⎯⎯⎯→

Figure 7-21   **Repetitive Defect Ruler**

Image System Troubleshooting

Half Self Test Functional Check

The electrophotographic process can be subdivided into the following stages:

- Cleaning (removing excess toner from drum surface)
- Conditioning (placing a uniform electrical charge on drum)
- Writing (laser strikes surface of drum to create latent image)
- Development (formation of the toner image on drum)
- Transfer (charge to transfer the image to paper)
- Fusing (heat and pressure to produce a permanent image)

See Chapter 5 for more information.

The purpose of the Half Self Test Check is to determine which process is malfunctioning. Perform the test as follows:

1 Print a Configuration Page. See Configuration Pages on page 653 for instructions.

2 Open the top cover after the paper advances half-way through the printer (about five seconds after the Main Motor begins rotating). The leading edge of the paper should have advanced past the toner cartridge.

3 Remove the toner cartridge.

4 Open the toner cartridge's drum shield to view the drum's surface.

   If a *dark and distinct toner image is present* on the drum's surface, assume that the first four functions of the electrophotographic process are functioning (cleaning, conditioning, writing, and developing—see Chapter 5), and troubleshoot the failure as a transfer or fusing problem.

   If *NO image is present* on the photosensitive drum, perform the functional checks on the following pages.

Drum Rotation Functional Check

The photosensitive drum, located in the toner cartridge, must rotate for the print process to work. The photosensitive drum receives its drive from the Main Drive assembly. To verify whether the drum is rotating:

1 Open the top cover.

2 Remove the toner cartridge.

3 Mark the cartridge's drive gear with a felt-tipped marker. Note the position of the mark.

4 Install the toner cartridge, and close the top cover. The start-up sequence should rotate the drum enough to move the mark.

5 Open the printer, and inspect the gear that was marked in step 3. Verify that the mark moved. If the mark did not move, inspect the Main Drive assembly to make sure that it is meshing with the toner cartridge gears. If the drive gears appear functional, and the drum does not move, replace the toner cartridge.

Note This test is especially important if refilled toner cartridges have been used.

High-Voltage Power Supply Check

The High-Voltage Power Supply PCA provides the necessary voltages for the electrophotographic processes (see figure 7-22 on page 680). A method for verifying the high-voltage system is given below.

Toner cartridge connection points

Visually inspect the four connection points on the inside right end of the toner cartridge. If they are dirty or corroded, clean the connections. If damaged, replace the toner cartridge.

High voltage contacts

The high voltage contact springs mount on the High Voltage Power Supply PCA and protrude through the toner cartridge cavity to contact the toner cartridge. Verify that the contacts are not dirty or corroded and that the spring action is functional. If damaged, replace the High Voltage Power Supply PCA (see High Voltage Power Supply (HVPS) on page 323 for instructions).
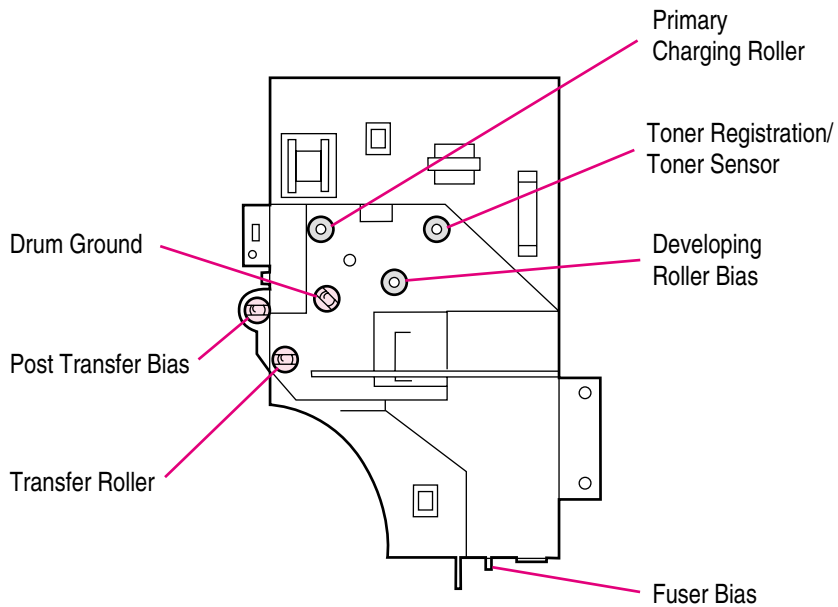
Figure 7-22 **High Voltage Power Supply Contacts**

Self-Diagnostics on Paper-handling Devices

2000-sheet Input Tray Standalone Diagnostics

The 2000-sheet Input Tray can run stand-alone diagnostic tests to test the device's motors, functionality, and sensors. You will need one power cord, one #2 Phillips screwdriver, and a small flat-blade screwdriver for the DIP switches.

2000-sheet Input Tray Motor Test

This test verifies that the three motors on the 2000-sheet Input Tray are functioning properly.

1   Identify the Back Cover (opposite from the tray door). Remove the four screws in the Back Cover. Remove the Back Cover (see Back Cover on page 273).

2   Pull open the paper tray, and open the Vertical Transfer Unit (VTU).

3   Set the DIP switches on the Controller PCA to Motor Test Mode. (See Table 7-35 on page 683 for an explanation of the DIP switch settings.)

4   To turn the Power Supply switch to Diagnostic Mode pull out on the blue handle.

   • If the motors are working properly, you will hear them as they rotate continuously.

   • If the motors do not rotate, replace the corresponding field-replaceable unit: either the Paper Pickup Assembly, the VTU, or the Paper Deck Drive Assembly.

5   To stop the test, set the power switch back to Operational Mode (push in), and reset the DIP switches on the Controller PCA to the off position (see Table 7-35 on page 683).

2000-sheet Input Tray Standalone Running Test

This test verifies that the 2000-sheet Input Tray is functioning properly. For this test, use the LED located on the Controller PCA on the 2000-sheet Input Tray. (See Table 7-36 on page 684 for an interpretation of the LED patterns.)

CAUTION   If the 2000-sheet Input Tray is setting underneath the printer, paper jams may occur because the printer will not pick up the paper. To prevent excessive paper jams during this test, feed only 6 to 8 pages.

1   Make sure that paper is in the tray.

2   Set the DIP switches on the Controller PCA for stand-alone running mode. (See Table 7-35 for an explanation of the settings).

3   To set the power supply switch to Diagnostic Mode, pull the blue power supply switch outward. The motors will start. Paper should now be lifted from the tray and fed through the VTU.

- If the unit does not work properly, the lower Service LED on the Controller PCA flashes in a pattern that indicates the problem. (See Table 7-36 on page 684 for an interpretation of the LED patterns.)

4   To stop the test, set the power supply switch back to Operational Mode, and set the DIP switches on the Controller PCA to the off position (see Table 7-35). Open the VTU, and remove any media from the paper path.

2000-sheet Input Tray Sensor Test

This test manually activates the sensors on the 2000-sheet Input Tray to test if they are working properly.

1 Set the DIP switches on the Controller PCA for sensor test mode. (See Table 7-35 for an explanation of the settings.)

2 For each paper sensor:

   a. Pull open the paper tray, and open the VTU.

   b. Remove the metal spring that holds the sensor unit in place (secured by 1 screw). (See Figure 6-76, callouts 2 and 5.)

   c. Pull out the sensor unit.

3 To set the power supply switch to Diagnostic Mode, pull the blue power supply switch outward.

4 To manually activate each sensor, press it in with your finger.

   • When you activate the sensor, the bottom Service LED on the Controller PCA comes on. When you release the sensor, the LED goes off.

   • If the LED does not come on, there is a problem with the sensor. Replace the corresponding field-replaceable unit.

5 To stop the test, set the power supply switch back to Operational Mode, and set the DIP switches on the Controller PCA to the off position (see Table 7-35).

NORMAL SETTING / TEST SETTING — OFF POSITION / ON POSITION

Table 7-35. DIP Switch Settings

DIP Switch	Normal	Motor Test	Stand-alone Running Test	Sensor Test
1	Off	On	On	Off
2	Off	On	Off	Off
3	Off	Off	Off	On
4	Off	On	On	On

Note Be sure to turn the power supply off and set all the DIP switches to the off position (normal settings) when you finish the diagnostics or the unit will not work properly. Then, replace the back cover.

2000-sheet Input Tray LED Status Interpretation

If the 2000-sheet Input Tray is working properly, it will pick up paper from the tray and feed it through the VTU, and the bottom Service LED will flash regularly every 0.5 seconds.

Table 7-36. 2000-sheet Input Tray LED Status Interpretation

Long (1 sec.)	Short (.03 sec.)	Error Number/ Meaning	Recommended Action
3	1	66.11.01 Lifter Malfunction	Lift the tray by hand to make sure that it lifts freely. Make sure that the paper size plates are correctly installed (in the same corresponding slots) and are not bent. If neither if these is the problem, replace Tray 4.
2	1	13.11.11 Registration Sensor Delay Jam	The media does not reach the sensor. Open the VTU door, and remove the media. Replace the VTU assembly or the paper pickup assembly.
2	2	13.11.3B Registration Sensor Station Jam/Initial Jam	Open the VTU door, and remove the media. Check the sensors, and replace the corresponding field-replaceable unit.
2	3	13.11.31 Jam Sensor Delay Jam	The media did not reach the sensor. Open the VTU door, and remove the media. Replace the VTU or the paper pickup assembly.
2	4	13.11.21 13.11.2B Jam Sensor Stationary Jam/Initial Jam	Open the VTU door and remove the media.
1	1	VTU Door Open	Close the door.
1	2	Paper Tray Open Wrong Size Paper Loaded.	Close the tray. Load the correct size of paper, or check the sensors.
1	3	No Paper in Tray	Load paper, or check the sensors.

Note   If the LED does not come on, replace the Paper Deck PCA or the Universal Power Supply Assembly.

2 x 500-sheet Input Tray Standalone Diagnostics

The standalone diagnostics are designed to test the 2 x 500-sheet Input Tray's motors, functionality, and sensors. You will need a power cord, a #2 Phillips screwdriver, and a small flatblade screwdriver for the DIP switches.

If the 2 x 500-sheet Input Tray is working properly, it picks paper up from the tray and feeds it into the VTU, while the bottom service LED flashes regularly every 0.5 seconds.

Note   To go from one test to another or to change the DIP switch settings, set the blue power supply switch to Operational Mode (push in). Reset the DIP switches on the Controller PCA, and then switch the power supply back to Diagnostic Mode (pull out) to enable the new diagnostic test. See figure 7-38 on page 688 for DIP switch settings.

2 x 500-sheet Input Tray Motor Test

This test verifies that the three motors on the 2 x 500-sheet Input Tray are functioning properly.

1   Identify the Back Cover (opposite side from tray door). Remove the 4 screws in the Back Cover. Remove the Back Cover.

2   Pull open Trays 4 and 5, and open the Vertical Transfer Unit (VTU).

3   Set the DIP switches on the Controller PCA to Motor Test Mode. (See table 7-7 on page 624 for an explanation of the DIP switch settings.)

4   To turn the power supply switch to Diagnostic Mode, pull out on the blue handle.

- If the motors are working properly, you will hear them as they rotate continuously.

- If the motors do not rotate, replace the corresponding field-replaceable unit: either the Paper Pickup Assembly, the VTU, or the Paper Deck Drive Assembly.

5   To stop the test, set the power supply switch back to Operational Mode (push in), and reset the DIP switches on the Controller PCA to the off position.
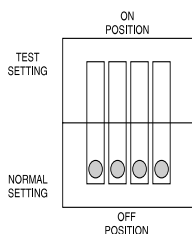
Table 7-37. DIP Switch Settings for troubleshooting test procedures

DIP Switch	Normal	Motor Test	Stand-alone Running Test	Sensor Test
1	Off	On	On	Off
2	Off	On	Off	Off
3	Off	Off	Off	On
4	Off	On	On	On

Note

The DIP switch is on if it is set to the top. The DIP switch is off if it is set to the bottom.

2 x 500-sheet Input Tray Standalone Running Test

This test verifies that the 2 x 500-sheet Input Tray is functioning properly. For this test, use the LED located on the Controller PCA. (See table 7-38 on page 688 for an interpretation of the LED patterns.)

CAUTION

If the 2 x 500-sheet Input Tray is underneath the printer, paper jams may occur because the printer will not pick up the paper. To prevent excessive paper jams during this test, feed only 6 to 8 pages.

1 Make sure that there is paper in both trays.

2 Set the DIP switches on the Controller PCA for standalone running mode. (See table 7-37 on page 686 for an explanation of the settings).

3 To test Tray 5, open Tray 4. To test Tray 4, open Tray 5.

4 To set the power supply switch to Diagnostic Mode, pull the blue power supply switch outward. The motors will start. Paper should now be lifted from the tray and fed through the VTU. The service LED flashes regularly every 0.5 seconds.

- If the unit does not work properly, the service LED on the Controller PCA flashes in a pattern that indicates the problem. (See table 7-38 on page 688 for an interpretation of the LED patterns.)

5 To stop the test, set the power supply switch back to Operational Mode. Open the VTU, and remove any media from the paper path.

6 To test Tray 4, close Tray 4 and open Tray 5. Repeat step 4.

7 To stop the test, set the power supply switch back to Operational Mode, and set the DIP switches on the Controller PCA to the off position (see table 7-37 on page 686). Open the VTU, and remove any media from the paper path.

2 x 500-sheet Input Tray Sensor Test

Note Be sure that trays 4 and 5 and the VTU are closed before starting the sensor test.

This test manually activates the sensors on the 2 x 500-sheet Input Tray to test if they are working properly.

1 Set the DIP switches on the Controller PCA for sensor test mode. (See table 7-7 on page 624 for an explanation of the settings.)

2 To set the power supply switch to Diagnostic Mode, pull the blue power supply switch outward.

3 To manually activate each sensor, press it in with your finger.

- When you activate the sensor, the service LED on the Controller PCA comes on. When you release the sensor, the LED goes off.
- If the LED does not come on, there is a problem with the sensor. Replace the corresponding field-replaceable unit.

4 To stop the test, set the power supply switch back to Operational Mode, and set the DIP switches on the Controller PCA to the off position (see table 7-7 on page 624).

Note Be sure to turn the power supply off, and set all the DIP switches to the off position (normal settings) when you finish the diagnostics or the printer will not work properly. Replace the back cover.

2 x 500-sheet Input Tray LED Status Interpretation

If the 2 x 500-sheet Input Tray is working properly, it will pick up paper from the tray and feed it though the VTU and the bottom service LED will flash regularly every 0.5 seconds.

See page 624 for 2 x 500-sheet Input Tray error messages.

Table 7-38. Patterns of LED flashing (2-second pause between each pattern)

Long (1 sec)	Short (0.3 sec)	Error Number/ Meaning	Recommended Action
3	1	65.11.04 Lifter malfunction	Verify that the tray lifts up freely by lifting it by hand. Verify that the paper size plates are installed correctly (in the same corresponding slots) and are not bent. If neither of these is the problem, replace Tray 4 or 5.
2	1	13.11.11 Registration sensor delay jam	The media did not reach the sensor. Open the VTU door, and remove the media. Replace the paper feed (VTU) assembly or the paper pickup assembly.
2	2	13.11.31 Registration sensor stationary/jam initial jam	Open the VTU door, and remove the media. Check the sensors, and replace the corresponding field-replaceable unit.
2	3	13.11.1B Jam sensor delay jam	The media did not reach the sensor. Open the VTU door, and remove the media. Replace the paper feed (VTU) assembly or the paper pickup assembly.
2	4	13.11.3B Jam sensor stationary jam/initial jam	Open the VTU door, and remove the media.
1	1	The VTU door is open	Close the door.
1	2	Trays 4/5 are open Wrong paper size loaded	Close the tray(s). Check the sensors. Load the correct size of paper. Check the sensors.
1	3	No paper in trays 4/5	Load paper. Check the sensors.

Note   If the LEDs will not come on, replace the paper deck PCA or the universal power supply assembly.

7-bin Tabletop Mailbox Standalone Diagnostics

The standalone diagnostics are designed to test the device's motors, functionality, and sensors. You will need a power cord, a #2 Phillips screwdriver, and a small flatblade screwdriver for the DIP switches.

Note   To change from one test to another or change the DIP switch settings, push the blue power supply switch in (off position), then set to the new test positions.

1   To remove the back cover remove 2 screws (see page 410).

2   Identify the interlock switch. This black switch is set when the 7-bin Tabletop Mailbox comes into contact with the printer. (Look on opposite side from the paper trays.) This interlock can be defeated by holding it in with a finger or a piece of tape.

3   Identify the DIP switch, SW1 (upper-right corner of the controller PCA).

4   Identify the service LED, LED1 (near the C-link connectors).

Table 7-39. DIP switch settings for troubleshooting test

DIP Switch	Normal Settings	Motor Test	Standalone Running Test Mailbox	Stacker	Sensor Test
1	Off	On	On	Off	Off
2	Off	On	Off	On	Off
3	Off	Off	On	Off	On
4	Off	On	Off	On	On
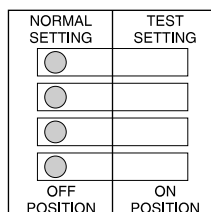
Note	The DIP switch is on if it is set to the right. The DIP switch is off if it is set to the left.

7-bin Tabletop Mailbox Motor Test

This test allows you to verify the functionality of the main motor, Face-down solenoid, and face-up diverter solenoid.

1 The top cover and paper access door must be closed to perform this test.

2 Set the DIP switches for the motor test (see table 7-39).

3 Pull out the power supply switch to the test position.

4 Press and hold in the interlock switch. A self-test should be performed, then the main motor will start moving continuously until the interlock switch is released. The service LED will flash every 0.5 seconds. If any other pattern results with the service LED, see table 7-40 on page 691 for the possible causes.

5 Push in the power supply switch to the normal position.

7-bin Tabletop Mailbox Standalone Running Test

This test allows you to feed paper into the unit to test the paper path without a connection to the printer. You can configure either the Mailbox Mode or the Stacker Mode to ensure the paper path is working properly.

1 The top cover and paper access door must be closed to perform this test.

2 Set the DIP switches for the standalone running test in either Mailbox Mode or the Stacker Mode (see table 7-39 on page 689).

3 Pull out the power supply switch to the test position.

4 Press and hold in the interlock switch. Perform a self-test. Then manually start feeding paper.

   • In Mailbox Mode, the unit will deliver paper to all bins, starting with the Face-up Bin, then down to the bottom bin.

   • In Stacker Mode, the unit will stack paper starting at the bottom bin until the top-of-stack is reached on each bin.

5 If problems are found, the possible cause will be indicated by the Service LED (see table 7-40 on page 691).

6 Push in the power supply switch to the normal position.

7-bin Tabletop Mailbox Sensor Test

This test allows you to check if all unit sensors are working properly. By activating any unit sensor flag, the service LED should turn on.

1 Make sure that all bins are empty to perform the sensor test.

2 Set the DIP switches for the sensor test (see table 7-39 on page 689).

3 Do NOT press the interlock switch in at this time.

4 Pull out the power supply switch to the test position.

5 Make sure that the service LED is off.

6 Manually activate any sensor flag. The service LED should turn on if the sensor is functional.

Note To test the top cover or paper access door sensors, you need to press the interlock switch and simultaneously open and close each cover. A self-test should be performed, and the LED should remain on.

To test the bin full sensors, press the sensor in the paper tray closest to the back of the 7-bin Tabletop Mailbox (on your left as you face the bins). The test will not work if you press the sensor closest to the front of the device.

CAUTION Be sure to turn the power supply off and set all the DIP switches to the off position (normal settings) when you finish the diagnostics or the printer will not work properly. Replace the back cover.

See page 629 for 7-bin Tabletop Mailbox error messages.

Table 7-40. Patterns of Flashing LEDs

Long	Short	Error Number/ Meaning	Recommended Action
3	1	66.12.16 66.22.16 Paper exit solenoid malfunction	● Perform the motor test to check the solenoids. ● Perform the sensor test. ● Replace the sensor bin full PCA, solenoids, or controller board.
2	1	13.12.31 13.22.31 Initial jam	● Open the top cover and paper access door to remove any remaining paper, then perform a sensor test. ● Replace the sensor bin full PCA or controller PCA.

Table 7-40. Patterns of Flashing LEDs (continued)

Long	Short	Error Number/ Meaning	Recommended Action
2	2	13.12.01 13.22.01 Jam without delivery notice	● Open all covers and doors in the device, and remove any jammed paper. ● Check for paper jammed in the printer. ● Try printing again.
2	3	13.12.11 13.22.11 Entry sensor delay	● Open all covers and doors in the device, and remove any remaining media. ● Check each output bin. ● Perform a sensor check. ● Check the sensor flag, the optical sensor, or cabling. ● Replace the sensor PCAs. ● Replace the controller PCA.
2	5	13.12.17 13.22.17 Face-up sensor delay	
2	7	Reversing area delay	
2	9	13.12.15 13.22.15 Vertical sensor delay	
2	4	13.12.21 13.22.21 Entry sensor activated too long	● Open the top and back covers, and remove any remaining media. ● Check each output bin. ● Perform a sensor check. ● Check the sensor flag, the optical sensor, or cabling. ● Replace the sensor PCAs. ● Replace the controller PCA.
2	6	13.12.27 13.22.27 Face-up sensor activated too long	
2	8	13.12.21 13.22.21 13.12.27 13.22.27 Reversing area sensor activated too long	
2	10	13.12.22 13.22.22 13.12.25 13.22.25 Vertical sensor activated too long	
1	1	Door open or interlock switch deactivated	● Close the top cover and paper access door. ● Firmly attach the 7-bin Tabletop Mailbox to the printer. ● Perform a sensor check. ● Check the bin full and interlock sensor PCA, cabling, and controller PCA.

Table 7-40. Patterns of Flashing LEDs (continued)

Long	Short	Error Number/ Meaning	Recommended Action
1	2	Bin full when running the standalone test	● Remove paper from all the bins.

8-bin Mailbox Standalone Diagnostics

The stand-alone diagnostics are designed to test the device's motors and functionality without connection to the printer. Note that the diagnostics do not test the functionality of the stapler. You will need one power cord and a small flat-blade screwdriver for the power supply switch.

8-bin Mailbox LEDs Description

The 8-bin Mailbox has two sets of LEDs:

● User LED. The first is a single LED located on the right side of the top cover (Figure 7-23, callout 1). This User LED provides information to the end user about the 8-bin Mailbox power-on status and the attachment and alignment to the printer.

● Service LEDs. The second set is formed by three independent LEDs located in the middle of the left side cover (Figure 7-23, callout 2). This group is called the Service LEDs, and they show additional technical information to decode the 8-bin Mailbox status.
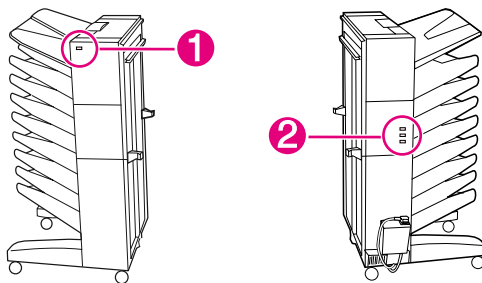
Figure 7-23 **8-bin Mailbox LEDs Description**

8-bin Mailbox Standalone Diagnostic Test

Each time you run the stand-alone diagnostic test, proceed as follows:

1 Turn off the printer, and pull the 8-bin Mailbox away from the printer.

2 With the 8-bin Mailbox unplugged, configure the power supply switch to the test mode by sliding the power supply switch up with a small flat-blade screwdriver (Figure 7-24, callout 1).

Figure 7-24 **8-bin Mailbox Power Supply Test Mode Switch**

1 Plug in the power cord. The User LED should be solid green, and the Service LEDs should be 'Off, Solid Red, Off' to indicate the test mode has been entered.

Note Be sure to reset the power supply switch to the normal operation when you finish the diagnostics; otherwise the unit will not work properly.

Power-on Test

1 Push the 8-bin Mailbox interlock switch and keep it pressed. A sequence of tests will begin to test the device.

2 The head assembly will move up and down twice, scanning that all unit bins are properly installed and that all unit motors have started.

3 At the end of the power-on test, the flipper motor remains on and waits for paper to be fed.

4   The User LED remains solid green and the service LEDs remain 'Off, Solid Red, Off' as an indication that the power-on test was successful.

5   If a problem exists, an error code will be shown in the Service LEDs. (See table 3-3 for an interpretation of the LEDs.)

8-bin Mailbox Paper Path Test

1   If the power-on test is successful, then manually feed paper through the input paper guide in the horizontal position.

2   The paper will pass across the flipper assembly and move down to the bottom bin by the double belt system through the head assembly.

3   If after feeding several pages the paper path test is successful, then reattach the 8-bin Mailbox to the printer.

4   If a problem exists, an error code will be shown in the Service LEDs. (See table 7-41 for an interpretation of the LEDs.)

Note   Be sure to reset the power supply switch to the normal operation when you finish the diagnostics; otherwise the unit will not work properly.

8-bin Mailbox LEDs Status Interpretation

Table 7-41. 8-bin Mailbox LED Status Interpretation

Message Description/Number	User LED	Service LEDs	Recommended Action
● solid green ○ solid amber ◒ blinking amber		● solid red ◓ blinking red ○ blank	
MBM Ready The 8-bin Mailbox was successfully connected and initialized by the printer.	●	○ ○ ○	No action required.
PowerSave Mode The 8-bin Mailbox is in PowerSave mode.	●	○ ○ ●	No action required.
Self-test Mode The 8-bin Mailbox is in test mode.	●	○ ● ○	● Run the power-on test. ● Run the paper path test.
MBM Unlatched from the Printer The 8-bin Mailbox is not properly attached to the printer.	◒	○ ○ ○	● Check for proper alignment. ● Check the attachment clips. ● Check the Adjustable Casters. ● Check the Interlock Switch.
Face-up Bin is Too Full The Face-up Bin has too much paper and it has reached the PSFaceUp flat, avoiding the flipping operation. 65.12.01 65.22.01	◒	◓ ◓ ○	● Remove the paper from the Face-up Bin. ● Check for a stuck Sensor Flag. ● Replace the Flipper Assembly. ● Check for the proper cable connections.

Table 7-41. 8-bin Mailbox LED Status Interpretation (continued)

Message Description/Number	User LED	Ser-vice LEDs	Recommended Action
● solid green ○ solid amber ● blinking amber			● solid red ● blinking red ○ blank
Jam in Flipper Area A time-out condition occurred at the entry area. 13.12.02 13.22.02 65.12.01 65.22.01	●	○ ○ ●	● Open the Jam Access Door, and check for a paper jam or an out-of-place Flipper Assembly shaft. ● Check for a stuck paper sensor. ● Replace the Flipper Assembly. ● Replace the 8-bin Mailbox PCA.
Jam in Belt A time-out condition occurred in the Transport Belt. 13.12.03 13.22.03	●	○ ● ○	● Check for paper jammed at the Transport Belt System/Delivery Head Assembly. ● Make sure that the Transport Belt (both belts) move freely. ● Make sure that the belts are parallel in the Transport Belt system. ● Make sure that the Metal Tape is in place and in good condition. ● Replace the Transport Belt Motor. ● Replace the 8-bin Mailbox PCA. ● Replace the Delivery Head Assembly.

Table 7-41. 8-bin Mailbox LED Status Interpretation (continued)

Message Description/Number	User LED	Ser-vice LEDs	Recommended Action
● solid green ○ solid amber ◐ blinking amber		● solid red ◑ blinking red ○ blank	
Jam in Delivery Head Assembly A time-out condition occurred in the PSExit1 sensor. 13.12.05 13.22.05	◐	○ ◑ ◑	● Check for paper jammed in the Delivery Head Assembly. ● Make sure that both the PSExit1 and PSExit2 sensors on the Delivery Head Assembly move freely. ● Make sure that the fingers are over the Ejector Rollers on the Delivery Head Assembly. ● Replace the flat ribbon cable that connects to the Delivery Head Assembly. ● Replace the Delivery Head Assembly. ● Replace the 8-bin Mailbox PCA.

Table 7-41. 8-bin Mailbox LED Status Interpretation (continued)

Message Description/Number	User LED	Service LEDs	Recommended Action
● solid green ○ solid amber ⬤ blinking amber		● solid red ○ blinking red ○ blank	
Jam in the Delivery Head Position System The elevator motor detected an invalid window when scanning. 13.12.06 13.22.06 65.12.03 65.22.03 65.12.03 65.22.03	⬤ (blinking amber)	○ blinking red ○ blank ○ blank	● Make sure that the Blind Cover and Scan Bar are installed properly. ● Check for paper jammed in the Transport Belt System and the Delivery Head Assembly. ● Make sure that the Delivery Head Assembly (up and down) moves freely. ● Make sure that all paper bins are seated correctly. ● Make sure that the paper bins and the Blind Cover are not broken. ● Replace the Delivery Head Position Motor. ● Replace the Delivery Head Assembly. ● Replace the 8-bin Mailbox PCA.
Slider Problem at the Head Assembly The sliders do not activate the slider photosensor. 65.12.04 65.22.04	⬤ (blinking amber)	○ blinking red ○ blank ○ blinking red	● Check for paper jammed in the Delivery Head Assembly. ● Make sure that all the paper bins are seated correctly. ● Replace the Delivery Head Assembly.

Table 7-41. 8-bin Mailbox LED Status Interpretation (continued)

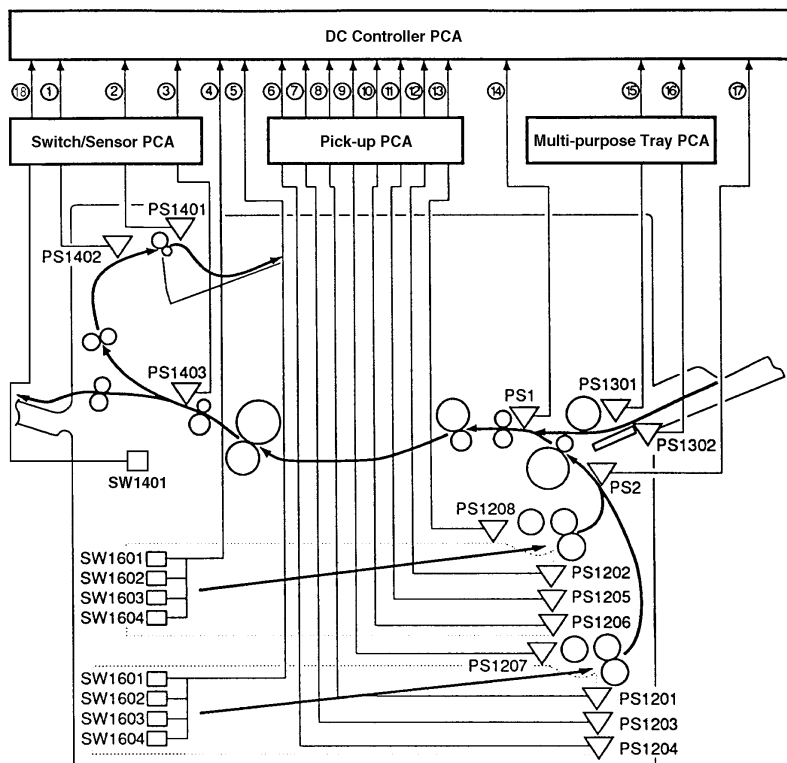| Message Description/Number	User LED	Ser- vice LEDs	Recommended Action
● solid green ○ solid amber ◐ blinking amber		● solid red ○ blinking red ○ blank	
Wrong Page Request A page request was received with an invalid output bin or invalid paper size information. 13.12.0A 13.22.0A	◐	○ ○ ○	● Check the bin destination. ● Check the paper size configuration. ● Turn on the printer.
Flipper Error During the flipper calibration, an abnormal reference voltage was encountered. 66.12.08 66.22.08	○	○ ○ ●	● Check for paper jammed in the Flipper Assembly area. ● Check the cable connections. ● Replace the Flipper Assembly. ● Replace the 8-bin Mailbox PCA.
External Memory Error The 8-bin Mailbox's nonvolatile RAM (NVRAM) is damaged. 66.12.09 66.22.09	○	○ ● ●	● Replace the 8-bin Mailbox PCA.

Diagrams

This section contains the following diagrams:

● The main wiring diagram is inserted inside the cover.

① : FACE-DOWN TRAY DELIVERY SENSE signal (/FDOUTS)	PS1: Registration paper sensor
② : FACE-DOWN TRAY PAPER FULL SENSE signal (/FDDULS)	PS2: Pick-up unit paper sensor
③ : FUSING UNIT DELIVERY SENSE signal (FPOUTS)	PS1201: Tray 3 present sensor
④ : TRAY 2 PAPER SIZE SENSE signal	PS1202: Tray 2 present sensor
⑤ : TRAY 3 PAPER SIZE SENSE signal	PS1203: Tray 3 paper-level sensor 1
⑥ : TRAY 3 PAPER-LEVEL SENSE signal 1 (LVPS1)	PS1204: Tray 3 paper-level sensor 2
⑦ : TRAY 3 PAPER-LEVEL SENSE signal 2 (LVPS2)	PS1205: Tray 2 paper-level sensor 1
⑧ : TRAY 3 SENSE signal (/LDECKC)	PS1206: Tray 2 paper-level sensor 2
⑨ : TRAY 3 PAPER-OUT SENSE signal (/LDECKS)	PS1207: Tray 3 paper-out sensor
⑩ : TRAY 2 PAPER-LEVEL SENSE signal 1 (UPVS1)	PS1208: Tray 2 paper-out sensor
⑪ : TRAY 2 PAPER-LEVEL SENSE signal 2 (UPVS2)	PS1301: Tray 1 paper present sensor
⑫ : TRAY 2 SENSE signal (/UDECKC)	PS1302: Lifting plate position sensor
⑬ : TRAY 2 PAPER-OUT SENSE signal (/UDECKS)	PS1401: Face-down tray paper full sensor
⑭ : REGISTRATION PAPER SENSE signal (/REGS)	PS1402: Face-down tray delivery sensor
⑮ : TRAY 1 PAPER SENSE signal (/MPTPS)	PS1403: Fixing unit delivery sensor
⑯ : LIFTING PLATE SENSE signal (/MPTLS)	SW1601: Paper-size sensing switch
⑰ : PICK-UP UNIT PAPER SENSE signal (/FEEDS)	SW1602: Paper-size sensing switch
⑱ : TOP/LEFT DOOR OPEN signal (UDOORS)	SW1603: Paper-size sensing switch
	SW1604: Paper-size sensing switch
	SW1401: Doors open switch

Figure 7-25 **Printer Sensors and Switches**
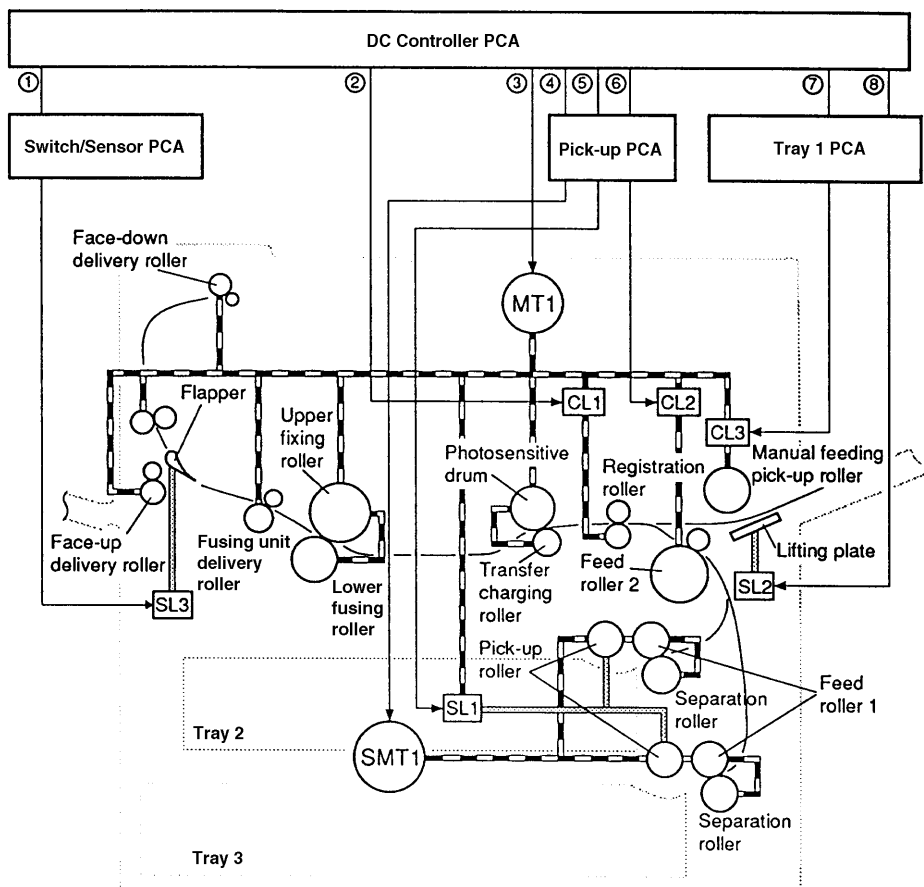
Figure 7-26 **Printer Motor, Clutches, and Solenoids**
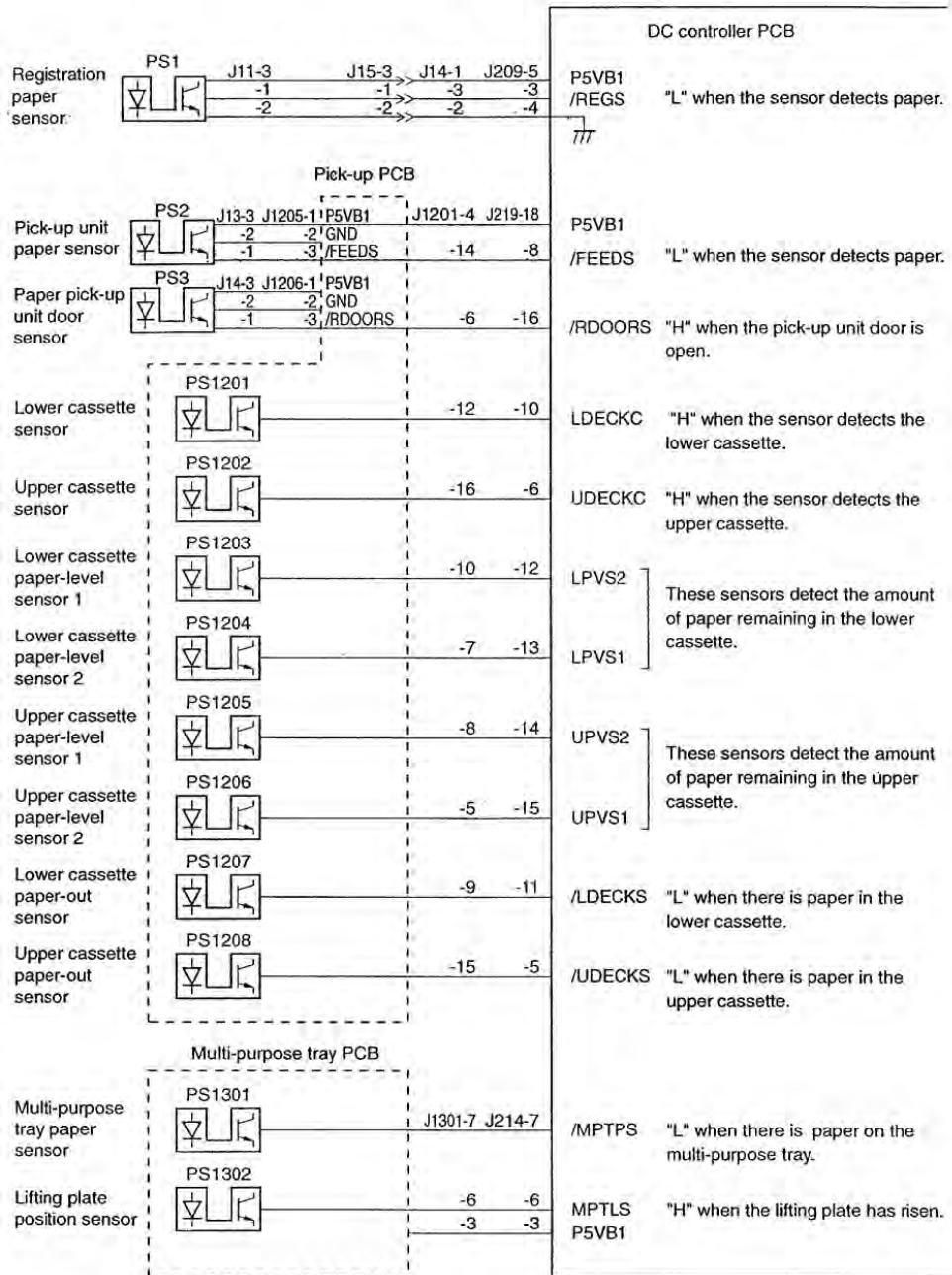
Figure 7-27 DC Controller Inputs and Outputs (1 of 5)
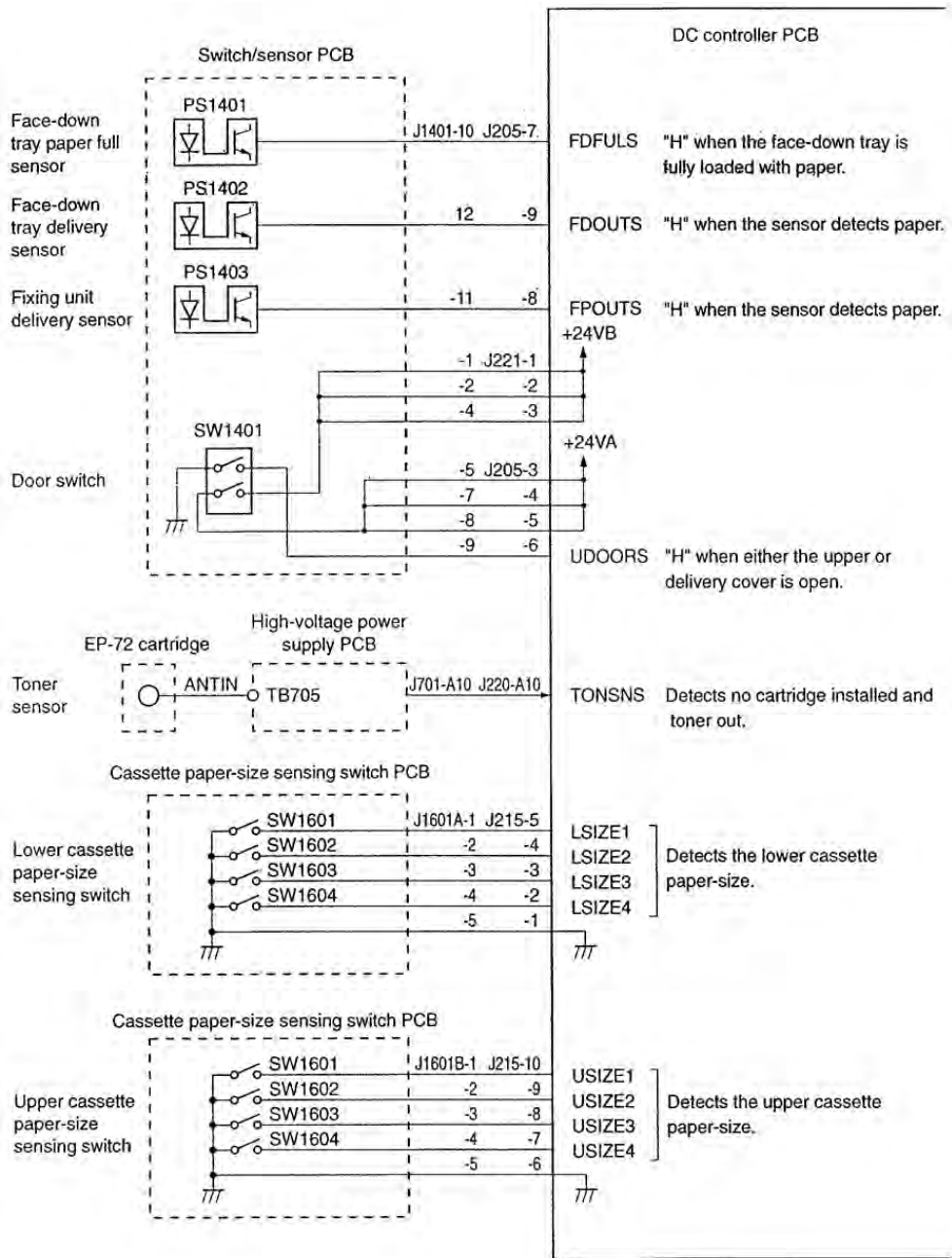
Figure 7-28 DC Controller Inputs and Outputs (2 of 5)
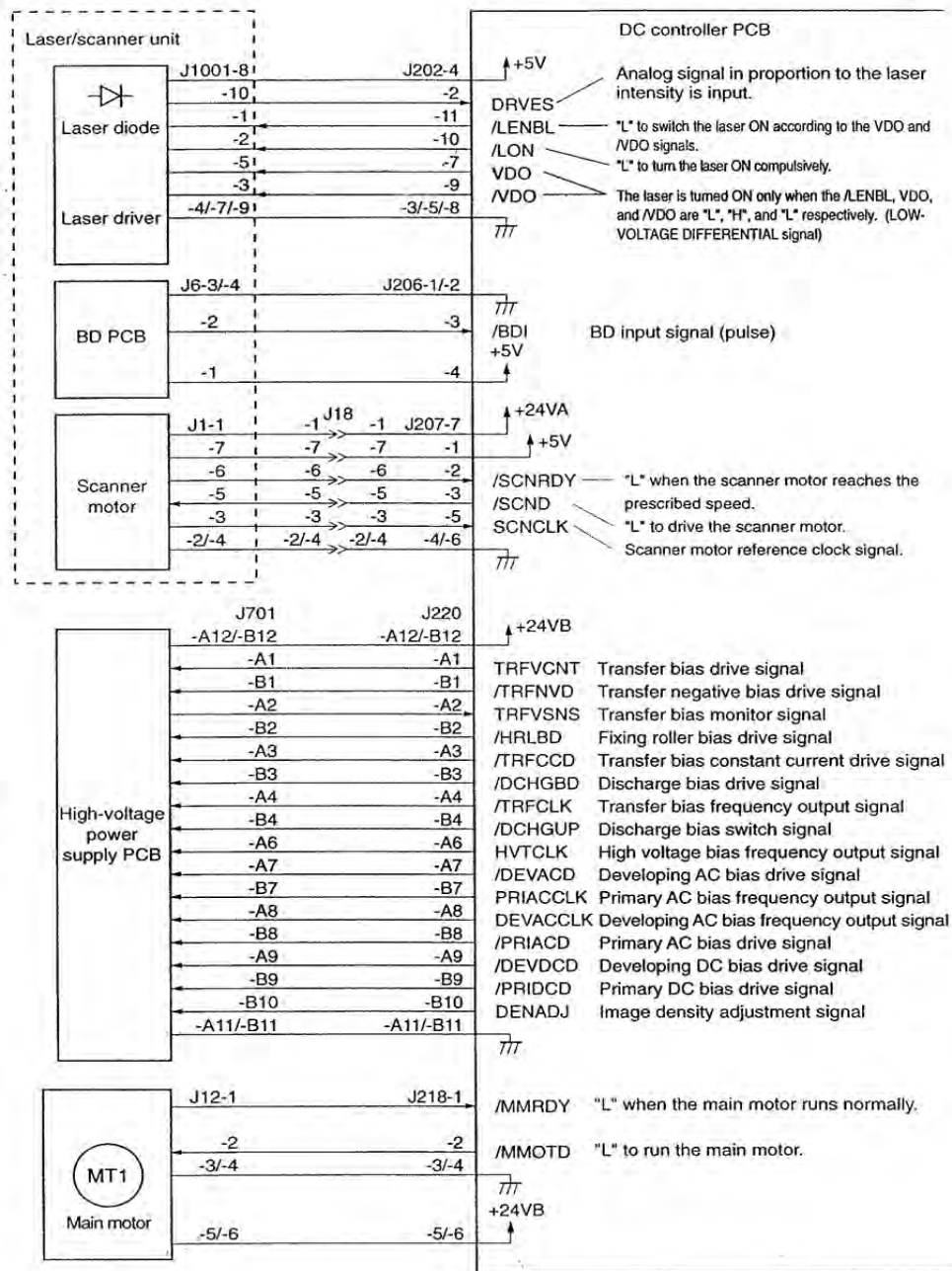
Figure 7-29 DC Controller Inputs and Outputs (3 of 5)
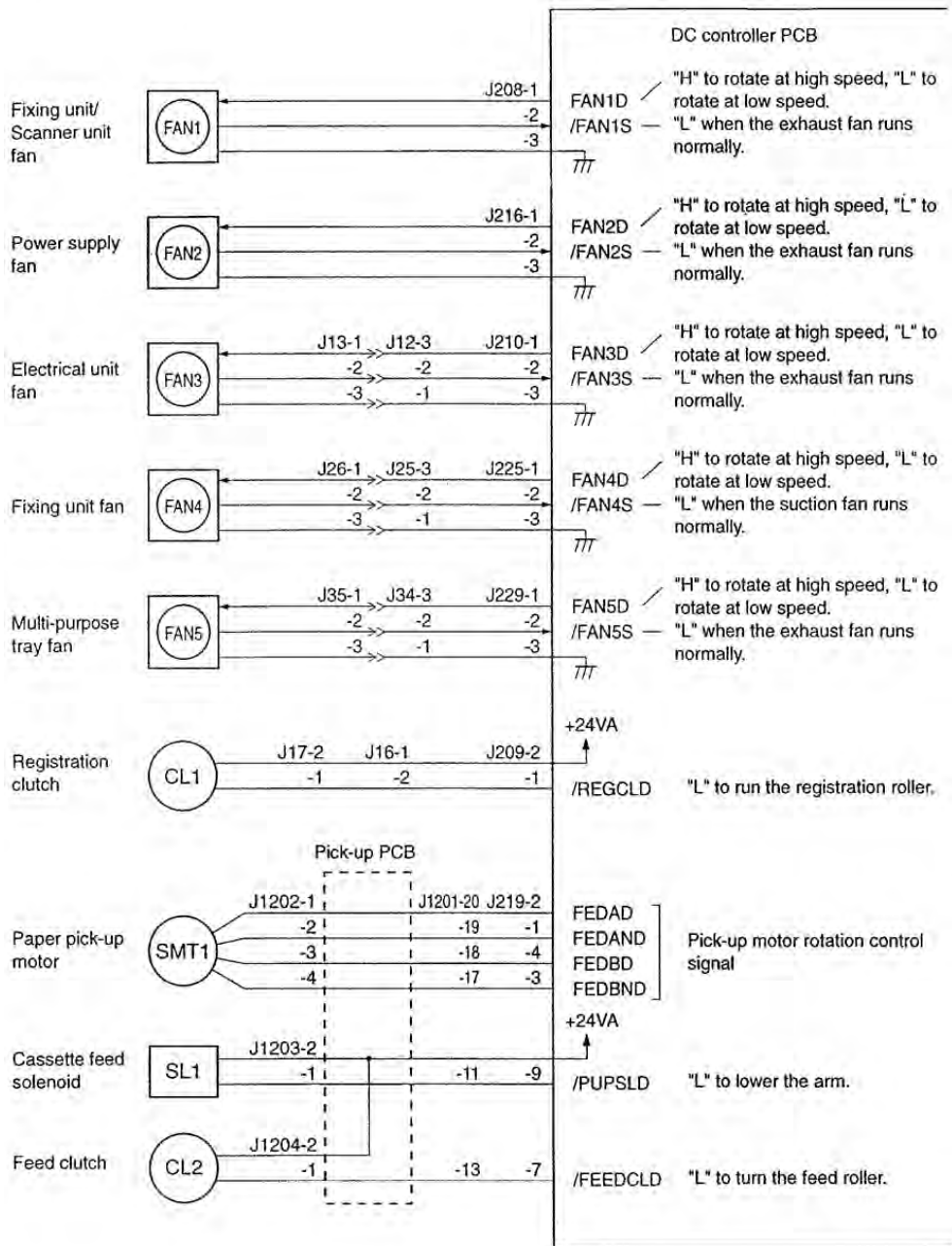
Figure 7-30 DC Controller Inputs and Outputs (4 of 5)
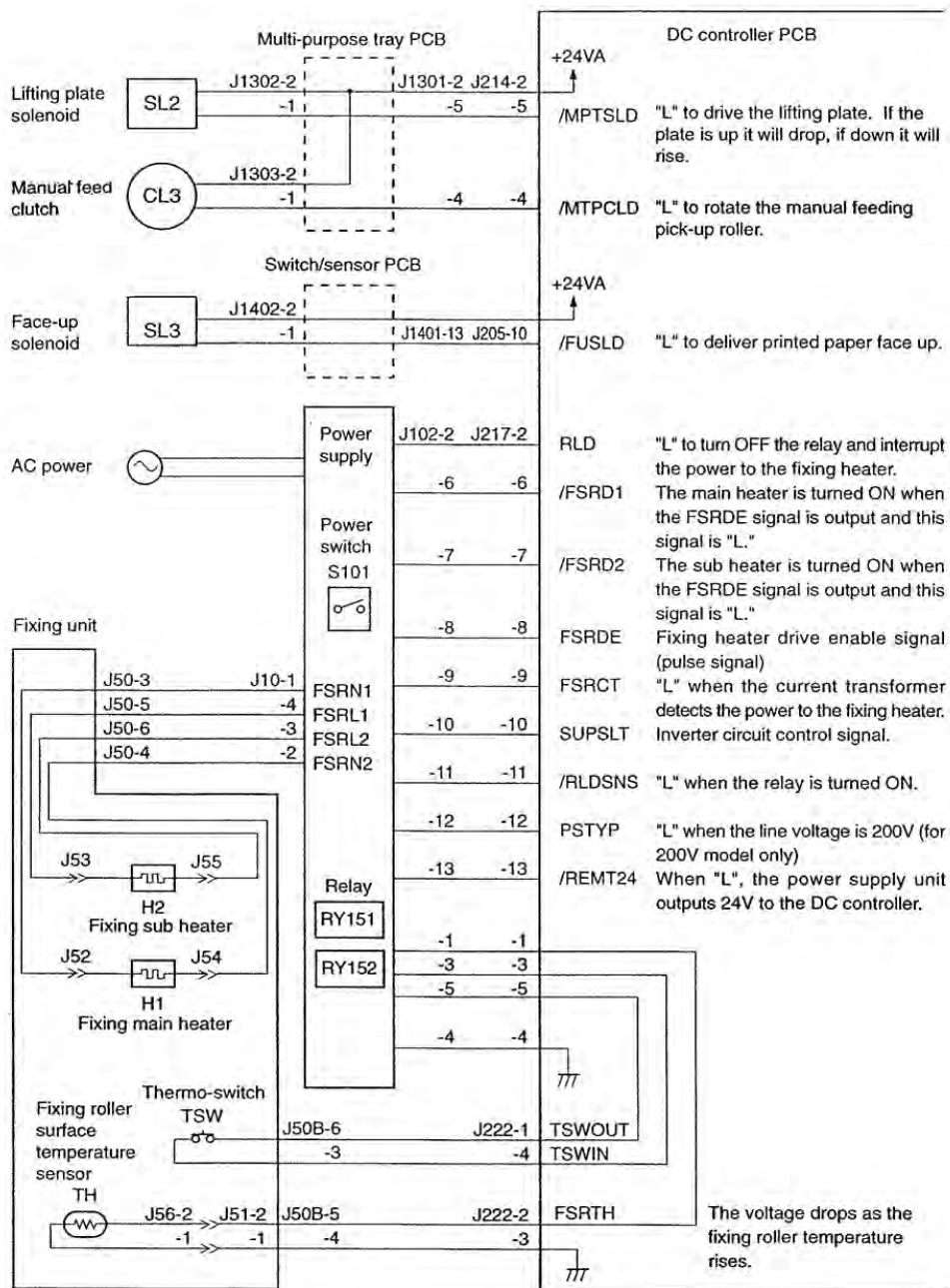
Figure 7-31 DC Controller Inputs and Outputs (5 of 5)
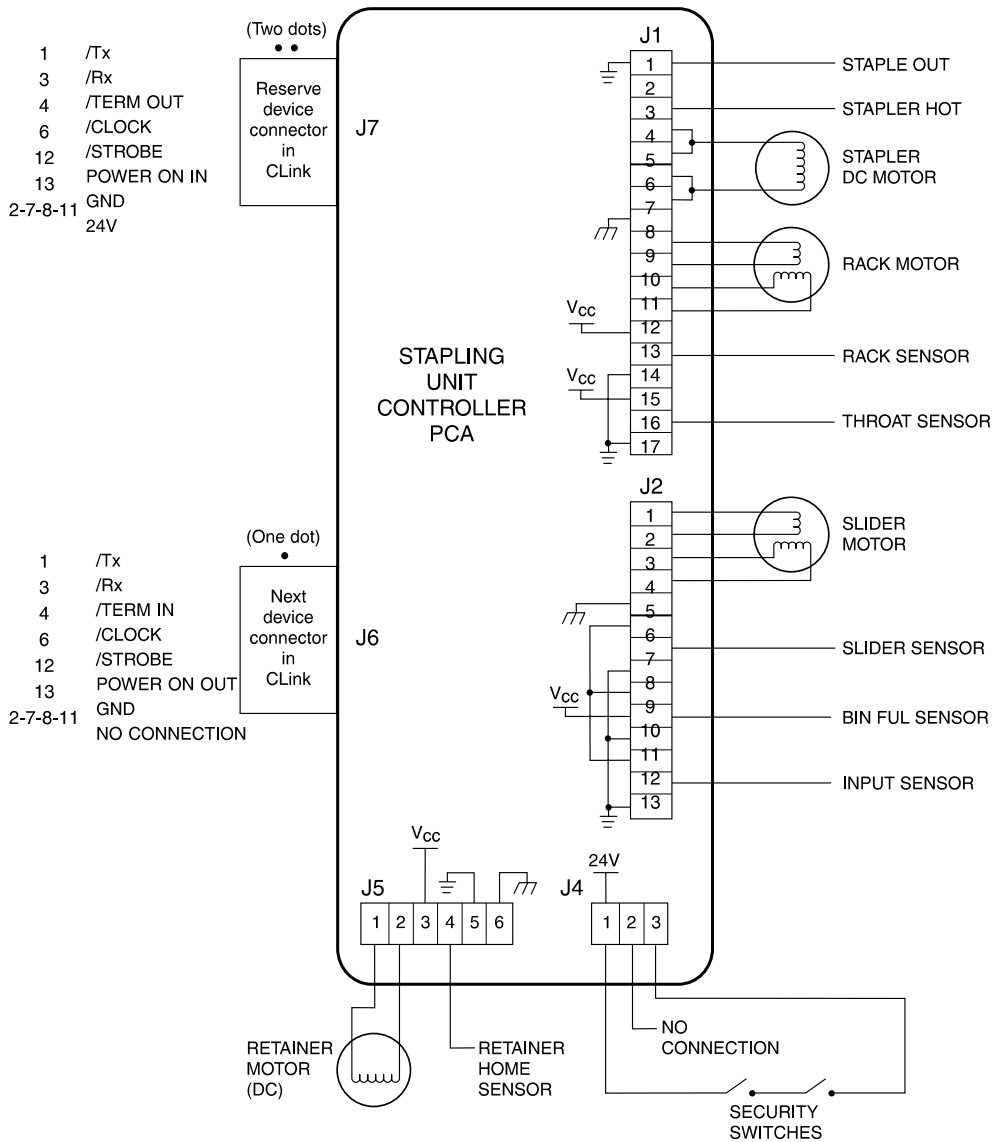
Figure 7-32   Mailbox with Stapler Wiring Diagram
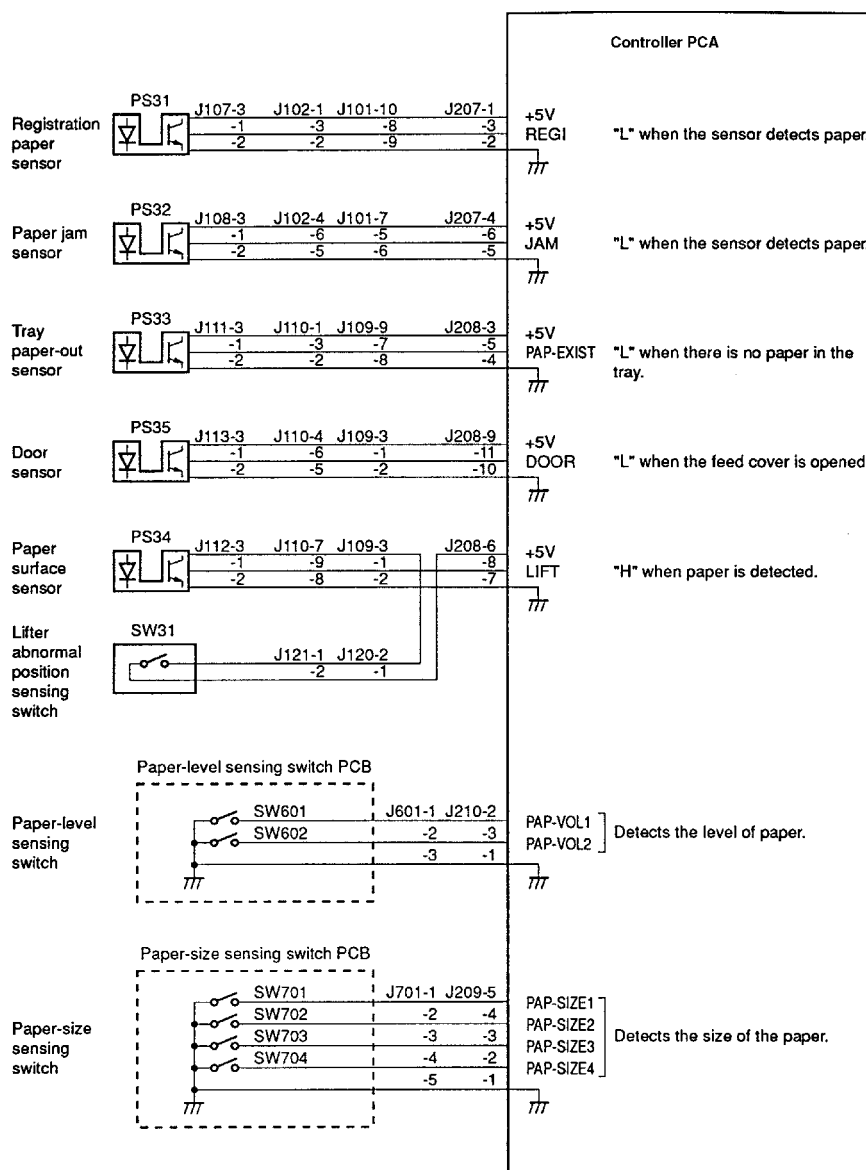
Figure 7-33 **2000-sheet Input Tray Controller PCA Inputs**
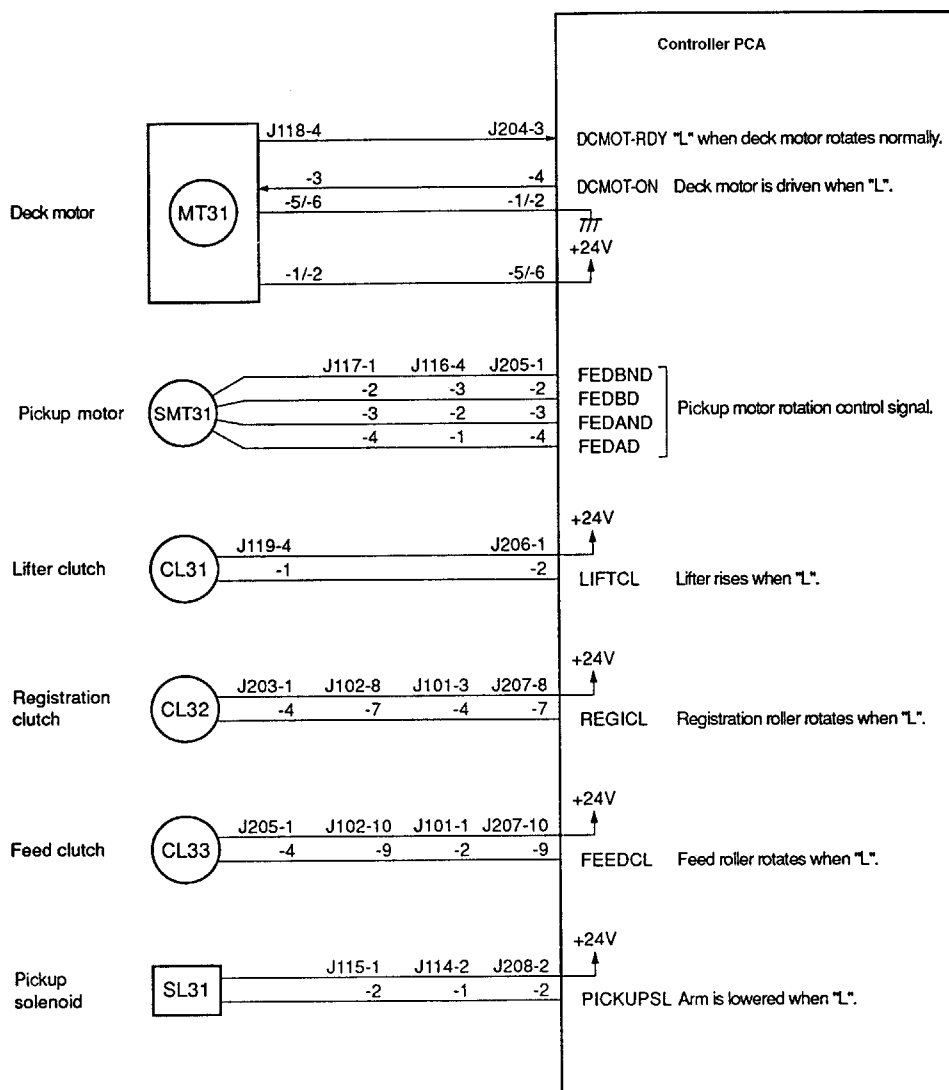
Figure 7-34   2000-sheet Input Tray Controller PCA Outputs
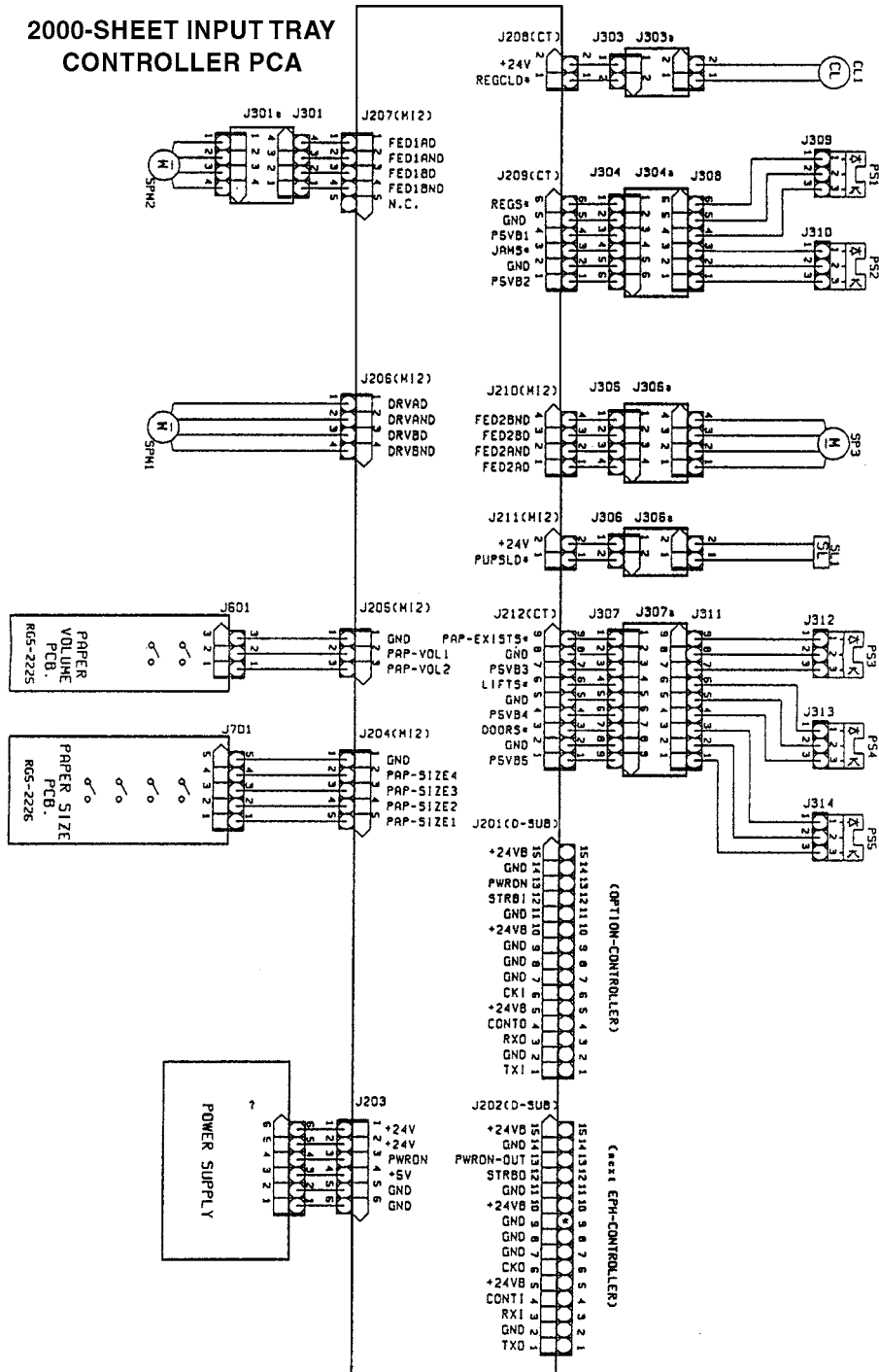
Figure 7-35 **2000-sheet Input Tray Main Wiring Diagram**
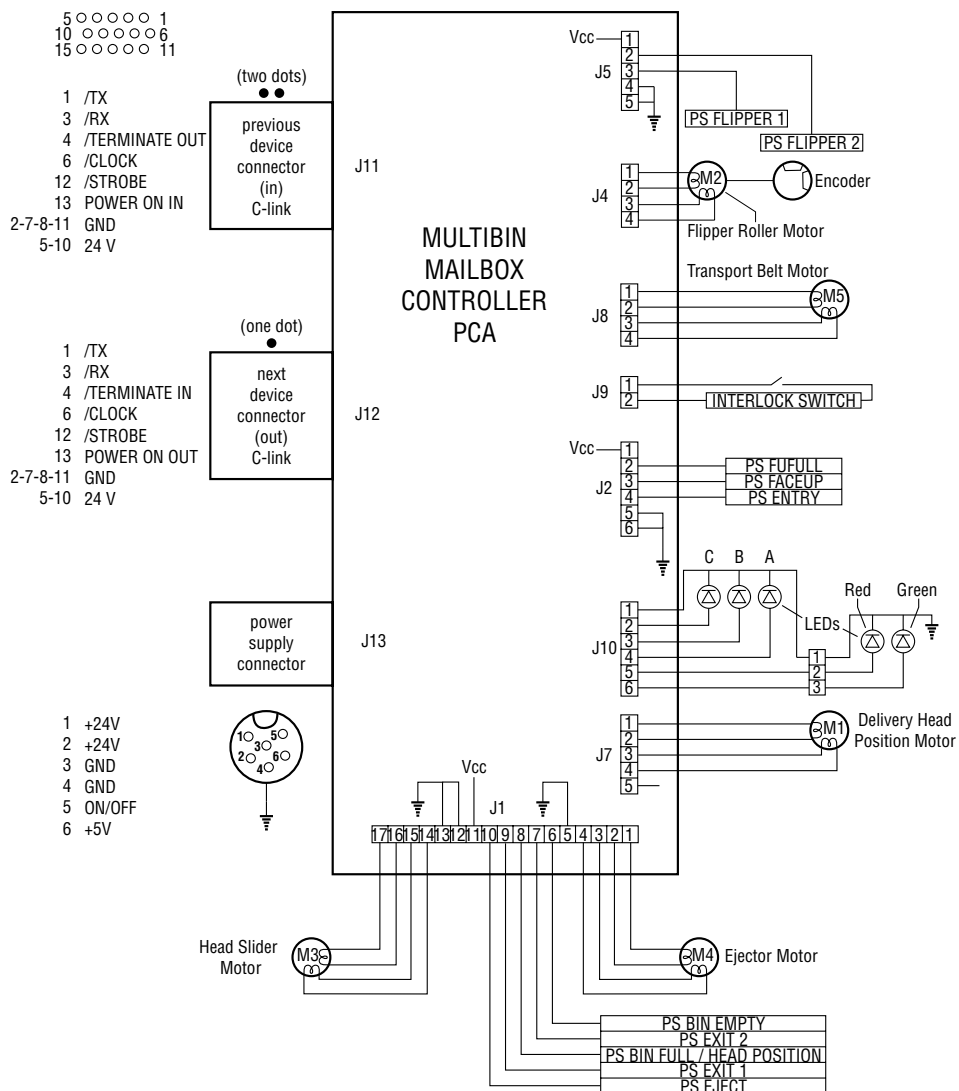
Figure 7-36 **8-bin Mailbox Main Wiring Diagram**

Troubleshooting the Copy Module

This section deals with troubleshooting procedures specific to the HP Digital Copier. For a general troubleshooting approach, see the flowcharts starting on page 575. The steps for troubleshooting the HP Digital Copier are as follows:

▼ Step 1: Power On (page 718)

▼ Step 2: Display and Communication (page 719)

▼ Step 3: Error Messages and Problems (page 720)

▼ Step 4: Information Pages (page 725)

▼ Step 5: Paper Path (page 726)

▼ Step 6: Image Quality (page 727)

Step 1. Power On

Is the copy module on and displaying anything on the Front Panel?
(YES = Go to Step 2: Display and Communication)

Table 7-42. Power On Checks

Check	Recommended Action
Is the host printer on and functioning correctly?	● Make sure both the printer and copy module power switches are set to the on position. ● Ensure the printer and copy module are not in power save mode. Press any key on the front panel. ● Eliminate paper-handling devices as a cause of the problem. ● Troubleshoot the printer. See page 594.
Is AC power available to the printer System?	● Check power to the printer's power receptacle. ● Make sure power is cabled correctly to provide AC power to the copy module. (See "Install the Y Power Cord" on page 496 for y cable descriptions.) ● To test power, plug in the copy module directly. ● Plug in a known working device to test the outlet.
Is the copy module's fan working?	● If the fan is running, the copy module power supply and Control PCA are probably OK. ● Disconnect the copy connect cable to the printer and plug in the Copy Module directly to the AC outlet. The copy module should boot to the second icon and stop. ● If the fan still does not run check its connection to the Control PCA. If the connection is OK, suspect the power supply.

After completing the power-on checks above, print the information pages from the printer's Information Menu.

● Verify that the copy connect EIO appears on the printer configuration page.

● Verify that the HP Digital Copier page prints.

Step 2. Display and Communication

Does the copy module LCD display indicate `READY TO COPY`? (YES = Go to Step 3: Error Messages and Problems)

Table 7-43. Display and Communication Checks

Problem	Recommended Action
The Fan works, but the display is blank with no backlight.	● Re-check power availability. ● Check the front panel connections and cable. ● Reseat the ribbon cable into the connector on the front panel. ● Suspect the front panel or the cable.
The display is blank with the backlight on.	● Check the front panel connections and cable. ● Inspect and reseat the ribbon cable into the connector on the front panel. ● Check the connections to and reseat the Power Supply and Main Board Assemblies. ● Reseat the copy connect EIO card and copy processor card. ● Check the connections between the copy connect EIO card and the Copy Processor card. ● Perform an offline test (page 733) to confirm the control PCA is good. ● Perform a Copy Processor LED test (page 730). If the Copy Processor is okay, suspect the front panel. Replace the suspected part.
The front panel backlight comes on and display shows the logo, a boot icon, or error message.	● Perform a Copy Processor LED test (page 730) to confirm that the Copy Processor is okay. If necessary, replace the Copy Processor. ● Reseat the copy connect EIO card and the copy processor card. ● Check the connections between the copy connect EIO card and the Copy Processor card. ● Print a directory of the printer's hard disk drive to check that the Copy Module Firmware is installed (see page 656). ● Make sure `Loading Program 1` and `Loading Program 2` displays on the printer's control panel during bootup. If it does not, re-download the copy module firmware (see page 150). ● If the display shows an error message, see page 720 to resolve the problem. ● If the display stops at one of the four boot icons, note which and see page 732 to resolve the problem.

Step 3. Error Messages and Problems

Have you resolved error messages? (YES = Go to Step 5: Paper Path)

Show or print the event log for the copy module or printer from the printer's Information Menu.

- Does the **copy module's front panel** report any errors? (See page 720 and take appropriate actions.)
- Does the **printer's control panel** report any copy module errors? (See page 607 and take appropriate actions.)
- Does the **printer's event log** report any errors? (See page 598 and take appropriate actions.)

Status Messages

This section shows status messages that display on the HP Digital Copier Front Panel when there is a problem with the HP Digital Copier. There are 3 different types of errors made by the HP Digital Copier:

- Boot Errors (page 721)
- Equipment Errors (page 721)
- Temporary Errors (page 724)

For printer problem solving information, see the printer troubleshooting flowchart starting on page 578. For printer and paper-handling devices error messages see page 604.

Boot Errors

Table 7-44. Boot Errors

Boot Error	Description
0x00058001	Bad connection (displayed after the second icon is displayed) This error indicates a bad physical connection between the copy module and the printer. This could also indicate that the Scanner Service Agent failed to load, or that the printer ID is not an HP LaserJet 8150MFP
0x00058002	No file (displayed after the third icon is displayed) This error indicates that a connection was established, the Scanner Service Agent loaded, but firmware was not found on the disk.
0x00058003	Bad file (displayed after the third icon is displayed) This error indicates that a connection was established, the Scanner Service Agent loaded, firmware was found on the disk, but one or more of the files appear to be corrupt. Note that the "bad file" error below can also indicate that the copy processor gave up on downloading the runtime firmware after trying several times. It can also occur sporadically if you try to print a printer configuration page while the copy processor is downloading the firmware

Note All other numbered Boot Errors (0x00000000-0x000007FF) indicate that the Copy Processor card failed its own diagnostics and is probably bad. These errors will likely be seen in conjunction with and can be confirmed by a blinking red LED on the Copy Processor LED test.

Equipment Errors

To correct an equipment error, turn the printer and HP Digital Copier off and then turn both devices on. If the error message persists, replace the indicated part.

Table 7-45. Equipment Errors

Error Message	Description
`DEVICE ERROR: EEPROM FAILURE`	Turn the printer off and then on. If the error persists, replace the Control PCA and the EEPROM.
`DEVICE ERROR: BACKSIDE RAM BUFFER FAILURE`	An error occurred while accessing the backside RAM buffer. Replace the Control PCA.
`DEVICE ERROR: MOTOR FUSE FAILURE`	The motor has a blown fuse. ● Check connections to motors. ● Check to see if the motors turn. ● Replace the motor. ● If the problem persists, replace the Control PCA. ● If the problem persists, replace the Power Supply.
`DEVICE ERROR: LAMP FUSE FAILURE`	A Lamp has a blown fuse. ● Check connections to Lamps. ● Replace the Control PCA.
`DEVICE ERROR: BACKSIDE OPTICAL FAILURE`	A problem occurred with the backside optical system. ● Check to see if the Lamp(s) turn on during an offline test. If yes, then clean the glass and optics. If no, replace the Lamp. ● Check the Optical Unit cable connection. ● Replace the Lamp. ● If the problem persists, replace the Control PCA.
`DEVICE ERROR: FRONTSIDE OPTICAL FAILURE`	A problem occurred with the frontside optical system. ● Check to see if the Lamp(s) turn on during an offline test. If yes, then clean the glass and optics. If no, replace the Lamp. ● Check the Optical Unit/Carrier Unit cable connection. ● If necessary, replace the Lamp. ● If the problem persists, replace the Control PCA.

Table 7-45. Equipment Errors (continued)

Error Message	Description
DEVICE ERROR: MECHANICAL FAILURE	A mechanical problem occurred. ● Check that the shipping lock has been removed and reinserted properly. ● Check that the Home Position Sensor is connected. ● Check the Carrier Belt. ● Check the Flatbed Motor. ● If the problem persists, replace the Flatbed Motor Unit. ● If the problem persists, replace the Control PCA. ● If the problem persists, replace the Power Supply.

Temporary Errors

A Temporary Error displays when problems with the paper path occur. The Front Panel will display the specific error and graphically illustrate the actions needed to correct the error.

Automatic Document Feeder
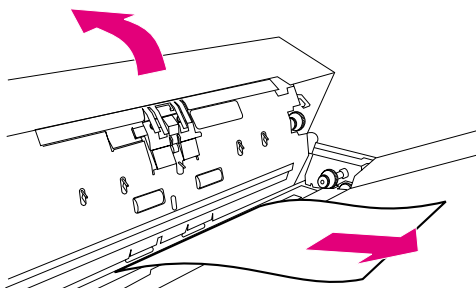
Table 7-46. Temporary Errors

Error Message	Description
ADF PAPER JAM	Paper was not found on the ADF path before a READ command was executed, or paper did not pass through the ADF within the specified time. This error state can be reset by one of the following operations: ● the copy module receives a CLEAR command ● or remove paper from the ADF and close the ADF cover ● visually inspect for bad alignment ● If the problem is chronic, clean or replace the ADF pick rollers and separation pad
ADF COVER IS OPEN	The ADF cover was opened during the ADF READ operation or the ADF cover was open when the ADF read started.
ADF MISFEED	A START command was received but a misfeed occurred from the ADF input tray. Restack the pages in the ADF input tray. Press START to continue the copy job. ● visually inspect for bad alignment ● If the problem is chronic, clean or replace the ADF pick rollers and separation pad

Step 4. Information Pages

Print information pages from the printer's Information Menu. See page 651.

Step 5. Paper Path

Is the ADF feeding paper correctly? (YES = Go to Step 6: Image Quality)

- Does the copy module cause damage to the original, experiencing frequent mispicks, double-feeds, jams, or skewed paper feeding?
- Check paper types used by customer and suggest to use the flatbed if out of specification.
- Determine if the ADF cleaning interval has been exceeded. (Check the configuration page. See "Sample Copy Module Configuration Page" on page 655 for an example. Inspect and clean the ADF assemblies as needed.)
- Determine if the maintenance interval has been exceeded. (Check the configuration page. See "Sample Copy Module Configuration Page" on page 655 for an example. Inspect and replace the Pick Rollers and Separation Pad as needed.)
- Try a copy from the flatbed to isolate the problem to the ADF mechanism or optics.
- Confirm connection to the ADF (3 cables), confirm ADF Motor Belt, and perform a test of the ADF sensors in the copy module service mode to ensure each sensor moves freely.
- Perform an ADF offset calibration (page 175).
- Perform the ADF test in service mode or an offline test and inspect mechanisms for failure. Be sure to use paper that conforms to HP recommended paper specifications for this test. Replace implicated components.
- See "Error Conditions" on page 727.

Step 6. Image Quality

Is the image quality acceptable? (YES = End)

● Does the copy module output display problems with any of the following? Resolution, grayscale, jitter, skew, image placement, improper image scaling, image out of position, part of image missing, unclear image.

● Determine if the problem is isolated to the flatbed, ADF, or occurs from both. Check to see if the suggested cleaning interval has been exceeded and clean if necessary. (See error and symptom tables and take recommended action.)

Table 7-47. Error Conditions

Error Condition/Symptom	Remedies
Power Lamp does not light	● Check the power plug and the Front Panel connection. ● Make sure that the PCA tray is inserted. ● If the problem persists, replace the Control PCA. ● If the problem persists, replace the Power Supply.
No image or image scrambled	● Check interface connections. ● If the problem persists, replace the Control PCA. ● Check the backside or frontside (if frontside only, replace the Carrier Unit).
Grayscale or resolution is bad on the flatbed	● Check that the document is placed on the flatbed correctly. ● Clean both sides of the flatbed glass. ● Clean the Carrier Unit. ● If the problem persists, replace the Carrier Unit. ● If the problem persists, replace the Control PCA.
Excessive Jitter on the flatbed	● Check to see if the cables routed in the mechanism frame are in contact with the Carrier Frame. Reroute the cables if necessary. ● Check for objects blocking the movement of the Carrier Unit during scan. Clean or remove. ● Check if carrier unit belt is loose. ● Replace FB Motor Unit if necessary. ● Clean and relubricate the Carrier Unit Shaft. ● Lubricate the carrier guide rail. ● Replace the Control PCA if necessary.

Table 7-47. Error Conditions (continued)

Error Condition/Symptom	Remedies
Image is out of position or partly missing from the flatbed	● Run an offset adjustment. ● Make sure that the glass plate assembly has been reseated correctly if moved. ● Replace the Carrier Unit.
Image is unclear or faded from the flatbed	● Check that the document is placed on the flatbed correctly. ● Inspect and clean both sides of the flatbed glass. ● Clean the Carrier Unit. ● If the problem persists, replace the Carrier Unit. ● If the problem persists, replace the Control PCA.
Magnification is incorrect from the flatbed	● Check to see if magnification is incorrect on subscan or mainscan direction. ● Subscan: check the Carrier Belt and tighten the adjustment screw, and lubricate the Carrier Shaft and Guide Rail. If the problem persists, replace the Flatbed Motor. ● Mainscan: replace the Carrier Unit. If the problem persists, replace the Control PCA.
Grayscale or resolution is bad on the ADF	● Check to see that the document is placed in the ADF paper chute correctly. ● Check to see that the document size is supported by the ADF. ● Frontside: clean both sides of the glass and clean the Carrier Unit. If the problem persists, replace the Carrier Unit. If the problem persists, replace the Control PCA. ● Backside: clean the glass under the ADF and clean the Optical Unit. If the problem persists, replace the Optical Unit. If the problem persists, replace the Control PCA.
Excessive Jitter on the ADF	● Check for contaminants on the Feed Roller, Eject Roller, and Idler Feed Roller. ● Check that the document size is supported by the ADF. ● Check the ADF for objects blocking mechanical operation. ● Clean the ADF. ● If the problem persists, replace the ADF.

Table 7-47. Error Conditions (continued)

Error Condition/Symptom	Remedies
Image is out of position or partly missing from the ADF	● Check that the original document size is supported by the ADF. If not, use the flatbed. ● Perform an offset adjustment. ● Clean the ADF. ● If the problem persists, replace the ADF. ● If frontside, replace the Carrier Unit. ● If backside, replace the Optical Unit.
Image is unclear, faded, or streaked from the ADF	● Inspect and clean both sides of the flatbed glass. ● Clean the ADF. ● Frontside: clean the Carrier Unit. If the problem persists, replace the Carrier Unit. If the problem persists, replace the Control PCA. ● Backside: clean the Optical Unit and back Lamp. If the problem persists, replace the Optical Unit. If the problem persists, replace the Control PCA.
Magnification is incorrect on the ADF	● Check that the original document paper type is supported by the ADF. If not, then use the flatbed. ● Check to see if magnification is incorrect on the subscan or mainscan direction. ● Subscan: inspect the Feed Roller, Eject Roller and Idler Feed Roller for foreign objects and clean if necessary. Clean the ADF. If the problem persists, replace the Control PCA. ● Mainscan frontside: replace the Carrier Unit. If the problem persists, replace the Control PCA. ● Mainscan backside: replace the Optical Unit. If the problem persists, replace the Control PCA.
Frequent paper feed errors: jams, mispicks, double-feeds, damaged originals, skewed copies on the ADF	● Check that the original document paper type is supported by the ADF. If not, then use the flatbed. ● Make sure that the originals are being loaded into the ADF correctly. ● Inspect the Pick Rollers and Separation Pad for contamination and clean. ● Clean the ADF. ● Replace the Pick Rollers and Separation Pad. ● Perform an offset calibration.
Front panel buttons and touch screen are not working	● Perform Front Panel tests. ● Replace the Front Panel. ● If the problem persists, replace the Control PCA.

Testing the Copy Module

Use the following tests to diagnose problems with the copy module.

- Print information pages (page 651)
- Copy Processor LED Test (below)
- Copy Module Boot Up Icon Conditions (page 732)
- Copy Module Offline Test (page 733)
- Other Tests (page 735)
- Service Mode Tests (page 737)

Note If the 1394 connect or firmware download fails, the display will freeze at icon 2, 3, or 4. The display of any icon is the best indication that the Front Panel is functioning correctly.

Copy Processor LED Test
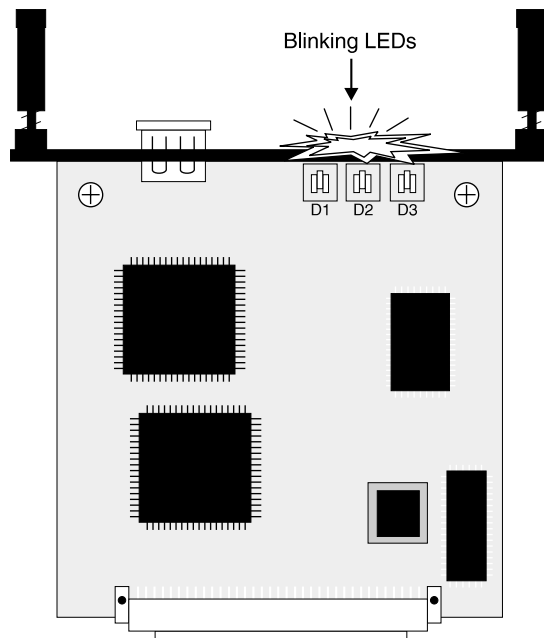
Figure 7-37   Copy Processor LEDs

Performing a Copy Processor LED Test

1 From the back of the copy module, unscrew the left thumb screw on the Copy Processor Card.

2 Gently pull the loosened thumbscrew downward, moving the bulkhead of the Copy Processor Card slightly away from the body of the copy module. Be careful not to unseat the Copy Processor Board.

3 Look down inside the copy module near the bulkhead of the Copy Processor Card. You should be able to see the Copy Processor LEDs.

Note   If you cannot see the LEDs you may have to temporarily remove the Copy Processor bulkhead. To do this, remove 2 screws to temporarily detach the bulkhead from the PCA so that the LEDs may now be seen easily. Reinstall the Copy Processor.

Copy Processor LED Test Results

Table 7-48. Copy Processor LED Test Results

If LED is	Indicates that Copy Process or is
Blinking green	Good - do not replace it
Blinking red	Bad and should be replaced
Blinking red and green	Probably good, but firmware download was not successful (Check the "Copy Module Boot Up Icon Conditions" on page 732 and the printer connections)

Copy Module Boot Up Icon Conditions

Table 7-49. Icon Conditions

Icon Condition	Recommended Action
No icon	● If the display is blank, or only the backlight appears, or it freezes at the logo, see "Display and Communication" on page 719. ● Check connections and suspect the Front Panel. (If the Copy Processor passes the LED test, the Front Panel should not stop at Icon 1.)
Stops at Icon 1	The copy processor did not pass its power on tests. ● Perform a Copy Processor LED test and if the test indicates the Copy Processor is bad, replace it.
Stops at Icon 2	The Copy Processor likely cannot make the connection to the printer. ● Check connections. ● Reseat cards. ● Check the printer's configuration pages for the Copy Connect EIO and Digital Copier Pages. ● Ensure the printer and its peripherals are working correctly. ● Make sure `Loading Program 1` displays on the printer's control panel during bootup. If it does not, re-download the copy module firmware (see page 150). ● Make sure the printer is an HP LaserJet 8150MFP.
Stops at Icon 3	Copy module firmware failed to download. ● Check connections. ● Reseat cards. ● Print a directory of the printer's hard disk drive to check that the Copy Module Firmware is installed (see page 656). ● Redownload the Copy Module Firmware (page 150). ● Make sure the printer is an HP LaserJet 8150MFP.
Stops at Icon 4	The system could not start the downloaded copy module firmware. ● Perform the recommended actions above. ● Make sure `Loading Program 1 and Loading Program 2` displays on the printer's control panel during bootup. If it does not, re-download the copy module firmware (see page 150). ● Print a directory of the printer's hard disk drive to check that the Copy Module Firmware is installed (see page 656). ● Redownload the Copy Module Firmware (page 150). ● Check the printer's configuration pages for the Copy Connect EIO and Digital Copier Pages.

Note   Download is complete and successful when the main menu replaces
                  Icon 4.

Copy Module Offline Test

This test does not depend on a functioning Copy Processor or a
functioning Front Panel. This is a pass or fail test. If the Carrier Unit
moves, the ADF feeds paper, and the Lamps come on, then the test is
passed. If this does not happen, the copy module will appear to be
dead.

Successful completion of this test will exercise the functionality of
both Lamps, the Carrier Unit, the Optical Unit, and the Control PCA.
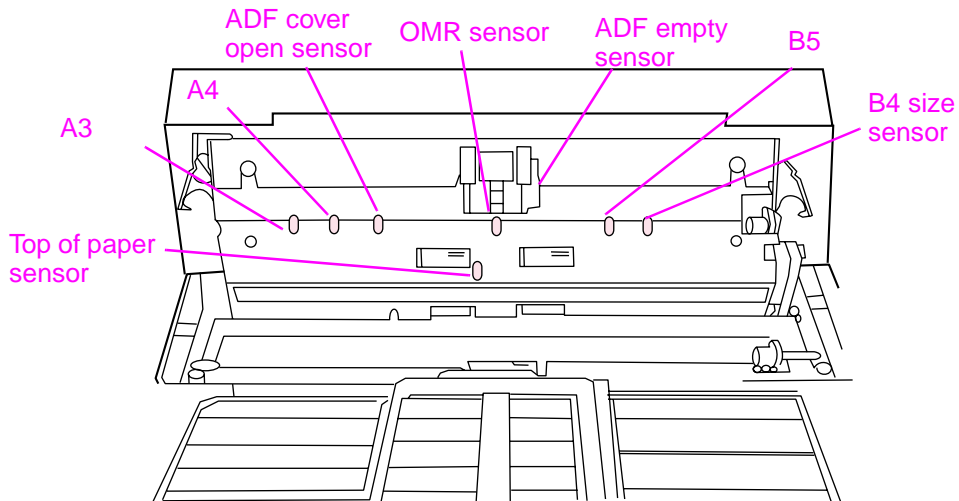
Figure 7-38   Locations of ADF Sensors

1   Turn the copy module off.

2   Open the ADF cover and pull the ADF Empty Sensor to the paper
        out position, and push the B5 Paper Sensor (with respect to
        portrait paper) while turning the copy module on. When you hear
        the copy module begin to initialize, release the sensors.

3   Close the ADF and then open the ADF.

4 Close the ADF. At this point you should be in the offline test mode. If no paper is loaded within 5 seconds, the flatbed test executes. (The Carrier Unit moves and the Lamp lights as if they were making a flatbed copy.)

5 Open the ADF to stop the flatbed test.

6 Have a stack of paper ready. Close the ADF and load paper.

7 The ADF will move paper and the Lamps will light as if making a two-sided copy.

Note   Successful completion of this test will exercise the functionality of both Lamps, the Carrier Unit, the Optical Unit, and the Control PCA.

Other Tests

Use the tests listed below to determine if a part is "good" or "bad" without swapping parts.

Table 7-50. Other Tests

Possible Bad Part	Tests and indicators that the part is "Good" or "Bad"
Copy Processor Board	Good if: ● the Front Panel icons display. ● the Copy Processor LED test (page 730) shows green or green and red.
Control PCA	Good if: ● there are no equipment errors. ● the fan is on. ● the Front Panel works. ● the offline test is OK.
Front Panel	Good if: ● the backlight comes on (might be OK). ● logo displays (probably OK). ● the first icons display (definitely OK). ● passes the service mode tests (which catch small defects such as bad pixels, stuck buttons, or no touch).
Power Supply	Good if: ● the fan comes on. ● the start button LED lights. ● the Front Panel displays an image.
Paper handling mechanisms	Good if: ● the service mode ADF test works. ● the offline test works. ● both tests work without damaging the original.

Table 7-50. Other Tests (continued)

Possible Bad Part	Tests and indicators that the part is "Good" or "Bad"
Optics	Good if: ● there is no optical failure. (An optical failure may also indicate it is time to clean the optics.) ● Lamps light during the offline test. ● a simple page is copied.
Copy Module Firmware	Good if: ● the disk directory matches the standard (file names and sizes). ● Loading Program 1 is visible on the Front Panel of the printer. ● the printer configuration page identifies an HP LaserJet 8150MFP. ● copy module firmware is reloaded.
Copy Connect EIO	Good if: ● shows up on the configuration pages. ● the fourth startup icon is passed.
ADF Sensors	Good if: ● the service mode test of each sensor passes.
ADF Lamp	Good if: ● resistor R3 is temporarily shorted to ground and the lamp lights. ● lights during an offline test.
Home Position Sensor	Bad if: ● the Carrier Unit bumps into the side of the copy module for 5 seconds.
Carrier Unit Lamp	Good if: ● lights during an offline test.

Service Mode Tests

The following tests are available through the copy module's Tests Menu in service mode. Follow the prompts on the front panel to complete the tests.

1 Front panel tests
- display
- touch screen

2 Keypad/LED tests
- keypad buttons
- start button LED

3 Sensors Tests (ADF)

4 ADF paper feed tests

8 Parts and Diagrams

Chapter contents

How to Use the Part Lists and Diagrams

The figures in this chapter illustrate the major subassemblies and their component parts. Each table lists the reference designator (item number) for each part, the associated part number for the item, the quantity, and a description of the part.

While looking for a part number, pay careful attention to the voltage listed in the description column to ensure that the part number selected is for the correct model of printer.

Note For information on the 3,000-sheet Stapler/Stacker, see HP 3,000-sheet Stapler/Stacker Service Manual Supplement for Paper-Handling Accessories (C4788-90904).

Note Parts that have no item or part number listed are not field-replaceable parts and cannot be ordered.

Ordering Parts

All standard part numbers listed are stocked and may be ordered from HP's CSSO-a or CSSO-E.

Hewlett-Packard Co. Commercial Service and Support Organization-Americas 8050 Foothills Blvd. Roseville, CA 95678 Parts Direct Ordering 1-800-227-8164 (U.S. Only)
Hewlett-Packard Co. Commercial Service and Support Organization-Europe Wolf-Hirth Strasse 33 D-7030 Böblingen, Germany (49 7031) 14-2253

Contact your local HP Parts Coordinator for other local phone numbers.

Common Hardware

See table 6-1 in Chapter 6 for a list of the common hardware used in the printer.

Illustrations and Parts Lists

The following illustrations and their associated parts tables list the field-replaceable components for this printer. Where applicable, the exchange part number is listed immediately following the original equipment part numbers. This chapter also provides two cross-reference tables of all the parts listed in this chapter: table 8-29 on page 791 lists the parts in alphabetical order, and table 8-31 on page 805 lists the parts in numerical order. Both tables are cross-referenced to the appropriate figure and reference designator in this chapter.

Printer and paper-handling components
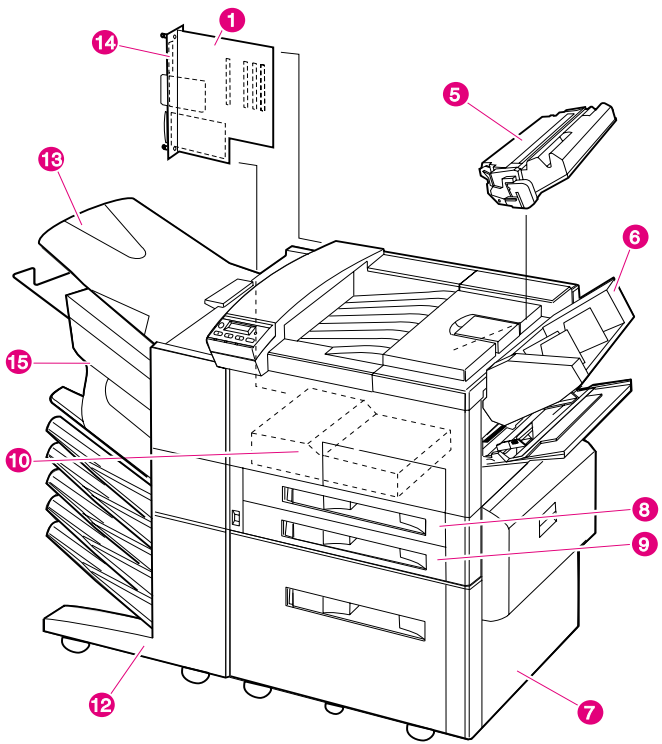
Figure 8-1   HP LaserJet 8150 MFP Paper-Handling Components

Table 8-1. Printer and Paper-Handling Components

Ref	Description/Product Number	8100 Part/ Exchange Number	8150 Part/ Exchange No. (if different)	QTY
01	Formatter Assembly	C4107-67901	C4265-67901)	
01A	Formatter Assembly, Exchange	C4107-69001 (ex.)	C4265-69001	
not shown	Firmware ROM	C4214-60005	C8530-67901	
not shown	8 MB Memory SDRAM DIMM	C4141-67901	C7842-67901	
not shown	16 MB Memory SDRAM DIMM	C7843-67901	C7843-67901	
not shown	32 MB Memory SDRAM DIMM	C4143-67901	C7845-67901	
not shown	64 MB Memory SDRAM DIMM	C7846-67901	C7846-67901	
05	Toner Cartridge/C4182X			
06	Envelope Feeder/C3765B	C3765-60501		1

Table 8-1. Printer and Paper-Handling Components (continued)

Ref	Description/Product Number	8100 Part/ Exchange Number	8150 Part/ Exchange No. (if different)	QTY
07	2000-sheet Input Tray (Tray 4)/C4781A	R95-3002-000CN		1
not shown	2 x 500-sheet Input Tray (Tray 4, 5)/C4780A	R95-3003-000CN		
08	Tray 2	R98-1005-000CN		1
09	Tray 3	R98-1004-000CN		1
not shown	Paper Size Guide (Trays 2 and 3)	RF5-1484-000CN		1
not shown	Paper Size Guide Label (Trays 2 and 3)	RS5-8605-000CN		1
10	Duplexer/C4782A	C4782-60501 C4782-69501 (ex.)		1
12	8-bin Mailbox/C4785B			1
12	5-bin Mailbox with Stapler/C4787A			1
12	5-bin Mailbox for Stapler (5-bin Mailbox only, without the Stapler Unit.)	C4787-60502 C4787-69502 (ex.)		1
13	Face-up Bin	RB1-6491-000CN		1
14	EIO Coverplate	5021-0349		3
15	Stapler Assembly	C4787-60500		1
not shown	7-bin Tabletop Mailbox/C4238A	R95-3007-000CN		1
not shown	Stand for 7-bin Tabletop Mailbox	C4784-60500		1
not shown	Packaging Kit, printer	5041-9238		
not shown	Packaging Kit, duplexer	C3762-60500		
not shown	Packaging Kit, 2000-sheet Input Tray	C3763-60500		
not shown	Packaging Kit, 8-bin Mailbox	C3764-60500		
not shown	Packaging Kit, Envelope Feeder	C3765-60500		
not shown	Maintenance Kit, 100-120V/C3914A	C3914-69001 (ex.)		
not shown	Maintenance Kit, 220-240V/C3915A	C3915-69001 (ex.)		
not shown	C-link Cable Assembly 61 cm (printer to 2000-sheet Input Tray)	C3763-60502		
not shown	C-link Cable Assembly 97 cm (8-bin Mailbox to Stapler)	C3766-60539		
not shown	Stapler Cartridges (3-pack)/C3772A			
not shown	Power Box (includes bracket clip)	C4781-60500		
not shown	Jumper Cable, Short	C4781-60501		
not shown	Jumper Cable, Long	C4781-60502		

Printer Parts and Diagrams
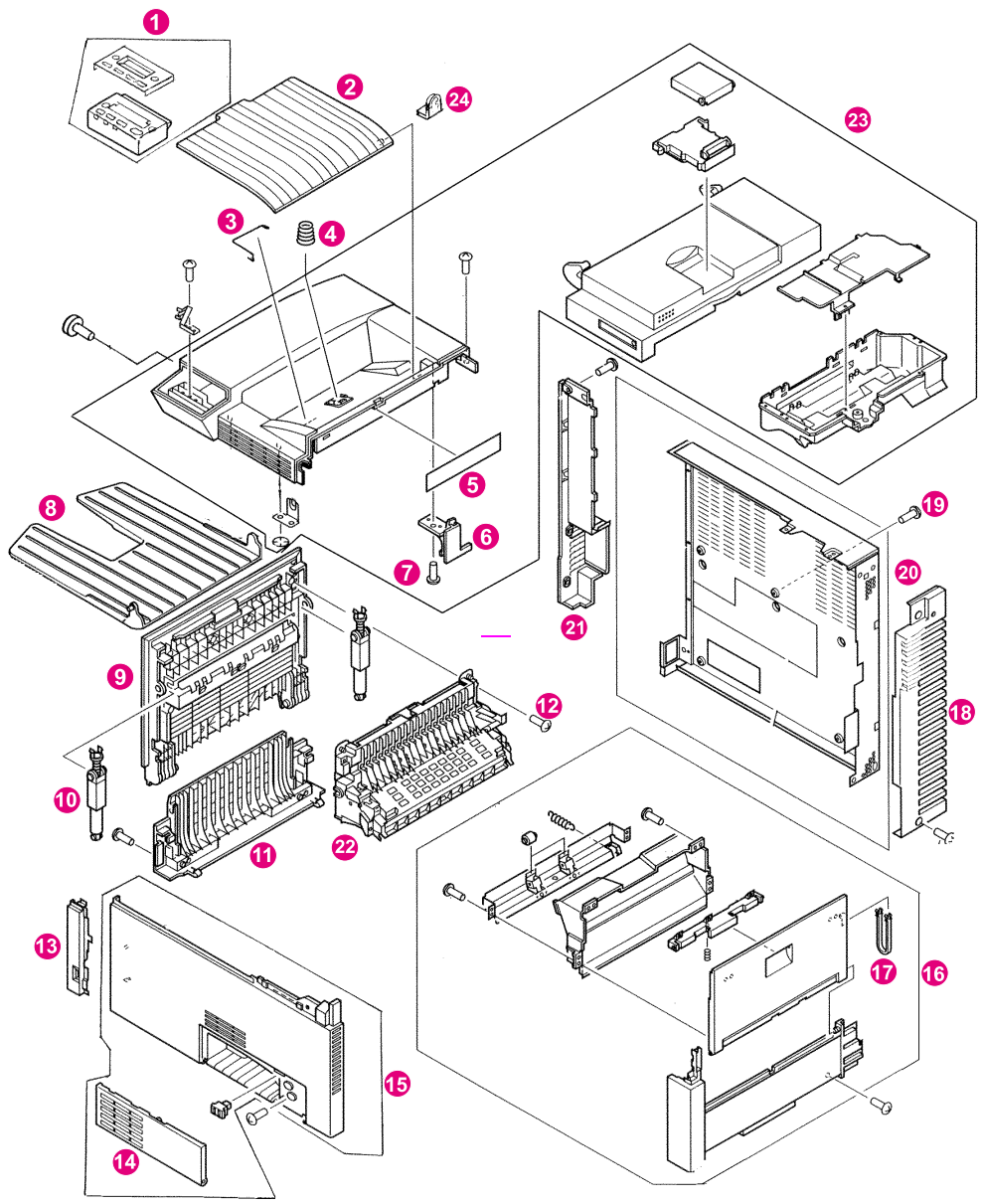
Figure 8-2 **Printer Covers and Doors**

Table 8-2. Printer Covers and Doors

Ref	Description	8100 Part No.	8150 Part No.	QTY
1	Display, Control Panel	RG5-4384-000CN		1
1a	Overlay, Control Panel (English)	C4214-40029		1
1a	Overlay, Control Panel (French)	C4214-40030		1
1a	Overlay, Control Panel (Italian)	C4214-40031		1
1a	Overlay, Control Panel (Portuguese)	C4214-40032		1
1a	Overlay, Control Panel (German)	C4214-40041		1
1a	Overlay, Control Panel (Spanish)	C4214-40042		1
2	Tray, Output-Face-down	RB1-6490-000CN		1
3	Spring, Torsion	RB1-6509-000CN		1
4	Spring, Compression	RB1-6493-000CN		1
5	Label, Operation	RS5-8676-000CN		1
6	Hinge Plate	RB2-3641-000CN		1
7	Screw, M4 x 10	XA9-0870-000CN		
8	Tray, Face-up	RB1-6491-000CN		1
9	Delivery Cover (Left Side F/U)	RB2-3558-000CN		1
10	Hinge, Stopper	RF5-2701-000CN		2
11	Cover, Left-Lower	RB1-6480-000CN		1
12	Screw, M4 x 8	XA9-0605-000CN		
13	Cover, Switch	RB1-6492-000CN		1
14	Front Cover (Duplex Jam Removal)	RB2-3626-000CN		1
15	Front Cover	RG5-4362-000CN		1
16	Right Cover Assembly	RG5-1915-000CN		1
17	Open/Close Stopper	RB1-6484-000CN		1
18	Right, Lower Cover (Rear Plastic on Metal)	RB2-3642-000CN		1
19	Screw, M3 x 8	XA9-0872-000CN		
20	Cover, Rear	RF5-1402-000CN		1
21	Electrical Cover (Rear by Formatter)	RB1-6489-000CN		1
22	Diverter Assembly	RG5-4325-000CN		1
22a (n/s)	Gear, 20T	RA9-1127-000CN		1
22b	Diverter Drive Assembly	RF9-1249-000CN		1
23	Top Cover Assembly	RG5-4360-000CN		1
24	Tray Lock (Plastic Clip)	RB2-3636-000CN		1

Figure 8-3 Printer Internal Components (1 of 4)

Table 8-3. Printer Internal Components (1 of 4)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Assembly, Transfer Roller	RG9-1361-000CN		1
2	Roller, Transfer	RF9-1394-000CN		1
3	Transfer Guide Bushing	RB1-6441-000CN		2
4	Transfer Guide Holder	RF5-2676-000CN		2
5	Holder, Damper-Front	RB1-6461-000CN		1
6	Holder, Damper-Rear	RB1-6462-000CN		1
8	Main Motor Cable	RG5-4386-000CN		1
9	Screw, M4 x 8 TP	XB6-7400-807CN		1
10	Main Motor	RH7-5219-000CN		1
11	Clutch Cover	RB2-3631-000CN		1
12	Paper Input Unit (PIU) (See Figure 8-7 on page 754 to order)	RG5-4334-000CN		1
12	Paper Input Unit (PIU) (ex.)	C4214-69004		1
13	Fusing Assembly, 110V	RG5-4318-000CN		1
x	Fuser Lock Lever-Right	RB1-6615-020CN		1
x	Fuser Lock Lever-Left	RB1-6616-020CN		1
13	Fusing Assembly, 110V (ex.)	C4214-69007		1
13	Fusing Assembly, 220V	RG5-4317-000CN		1
13	Fusing Assembly, 220V (ex.)	C4214-69008		1
14	Printer Drive Assembly	RG5-4365-000CN		1
15	Registration Assembly	RG5-4303-000CN		1
15A	Electromagnetic Clutch	RH7-5187-000CN		1
16	Feeder Assembly (see figure 8-7 on page 754 for detail)	RG5-4305-000CN		1
17	Tray 1 Assembly (see figure 8-7 on page 754 for detail)	RG5-4330-000CN		1
17A	Cover, Internal Tray	RB1-6749-000CN		1
18	Tray 1 Assembly Cover	RG5-4329-000CN		1
19	Face-down Delivery Assembly (see figure 8-7 on page 754 for detail)	RG5-1874-000CN		1
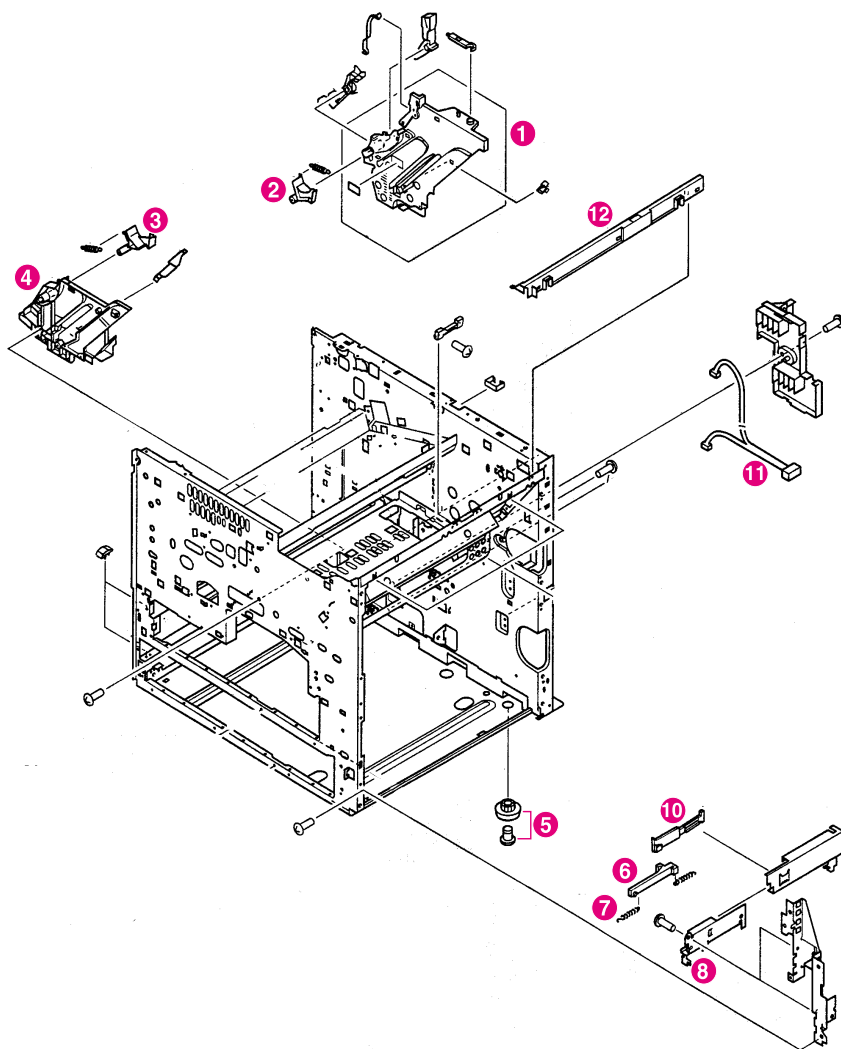
Figure 8-4 **Printer Internal Components (2 of 4)**

Table 8-4. Printer Internal Components (2 of 4)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Guide, Rear	RF5-2726-000CN		1
2	Release, Arm	RB1-6446-000CN		1
3	Arm-Pressure-front	RB1-6444-000CN		1
4	Guide, Front	RB2-3622-000CN		1
5	Foot	RB1-6421-000CN		4
6	ROD Rail	RB1-6778-000CN		2
7	Spring, Tension	RS5-2499-000CN		2
8	Guide, Rail	RB1-6776-000CN		2
9	Stopper, Rail, Tray	RB1-6777-000CN		2
10	Stopper, Rail,Tray	RB1-6783-000CN		2
11	Cable, Tray Sensor, Cassette Size	RG5-1920-000CN		1
12	Cover, Upper Right	RB1-6464-000CN		1
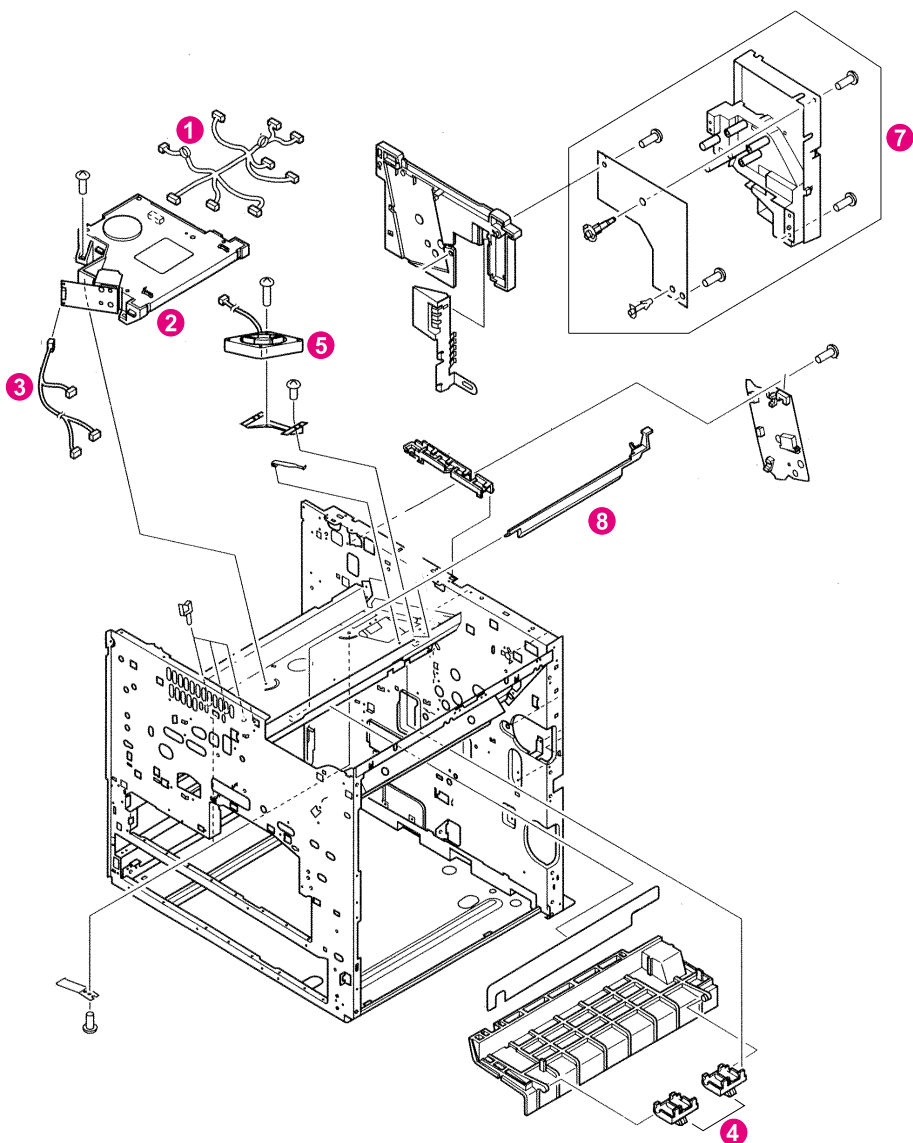
Figure 8-5 Printer Internal Components (3 of 4)

Table 8-5. Printer internal Components (3 of 4)

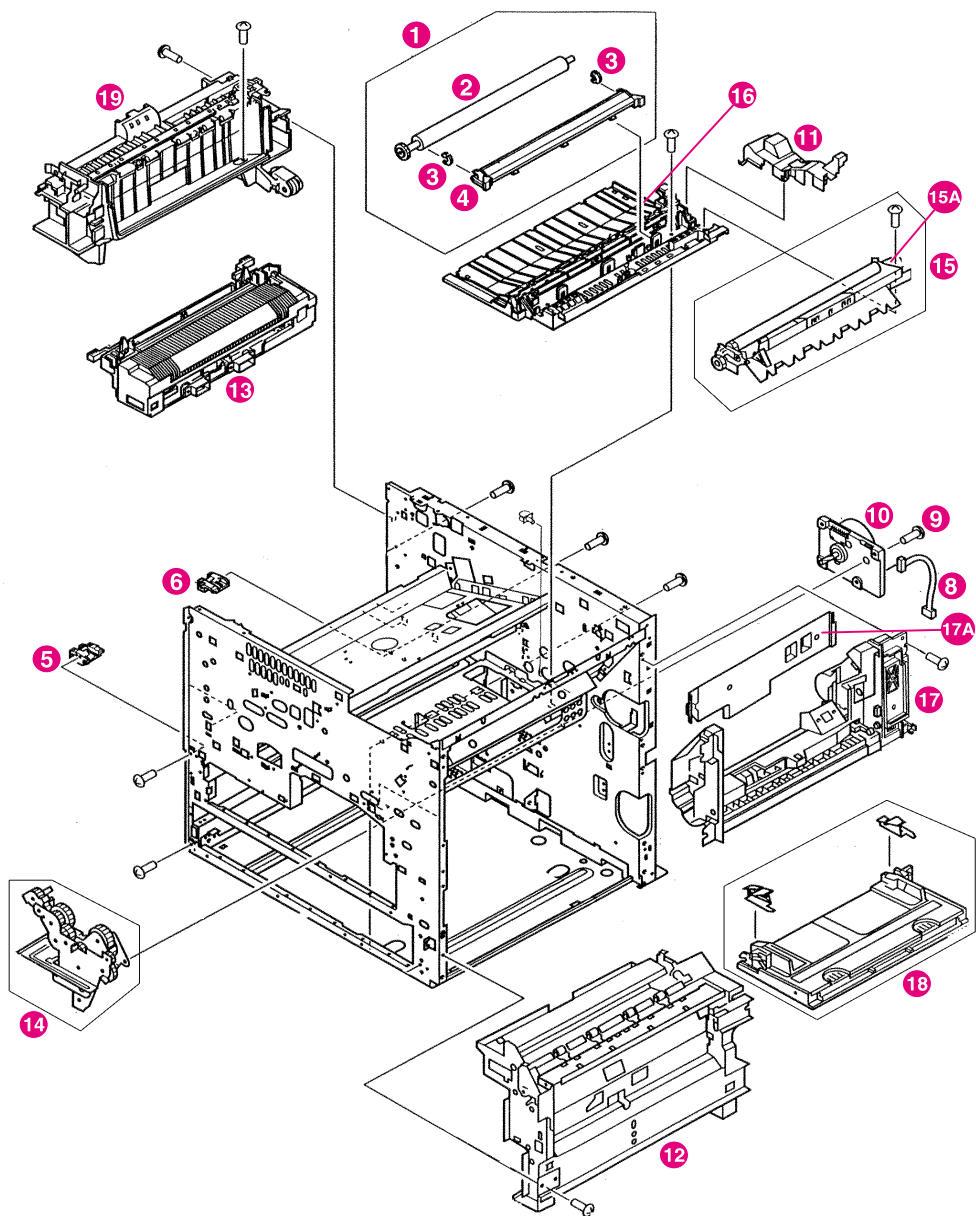| Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Cable, Scanner Motor	RG5-4378-000CN		1
2	Assembly, Laser Scanner	RG5-4344-000CN		1
2	Assembly, Laser Scanner (exchange)	C4214-69003 (ex.)		1
3	Laser and Control Panel Cable	RG5-4377-000CN		1
4	Stopper, CG	RB1-6427-000CN		2
5	Fan, FM2/Laser Scanner	RH7-1266-000CN		1
6	Shutter, White (not shown)	RB1-6473-000CN		1
7	High-Voltage Power Supply	RG5-4306-000CN		1
8	Shutter	RB1-6458-000CN		1
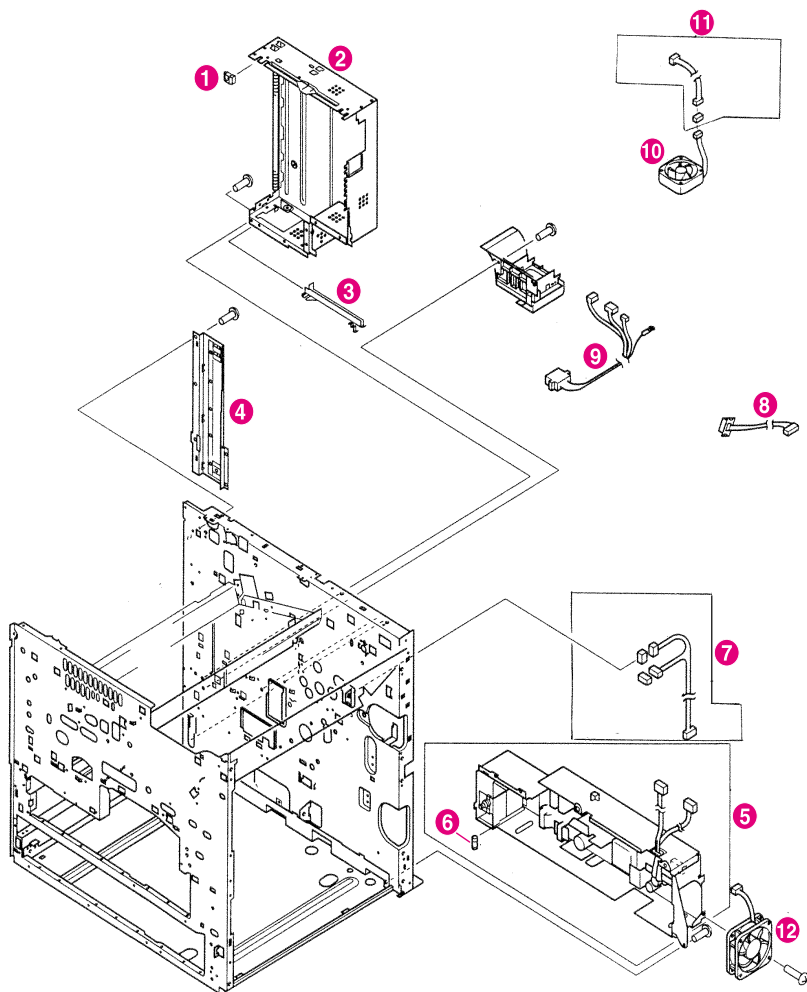
Figure 8-6 Printer Internal Components (4 of 4)

Table 8-6. Printer Internal Components (4 of 4)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Guides, Interface	RB1-6771-000CN		2
2	Shield, Formatter	RF5-2678-000CN		1
3	Guide, Slide	RB1-6775-000CN		1
4	Shield, Plate	RF5-1464-000CN		1
5	Power Supply, Low-Voltage 110 V	RG5-4300-000CN		1
5	Power Supply, Low Voltage-220 V	RG5-4301-000CN		1
6	110V Fuse	VD5-0246-301CN		1
7	Cable, Registration	RG5-1928-000CN		1
8	Cable, Fuser 2	RG5-1850-000CN		1
9	Cable, Fuser 1	RG5-4381-000CN		1
10	Fan, FM3/Formatter	RH7-1271-000CN		1
11	Cable, Fan 3	RG5-1921-000CN		1
12	Fan, FM2/Low Voltage Power Supply	RH7-1396-000CN		1
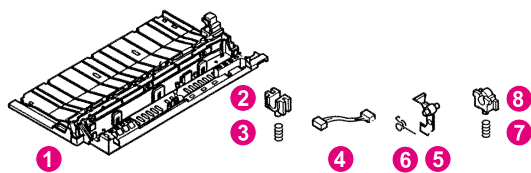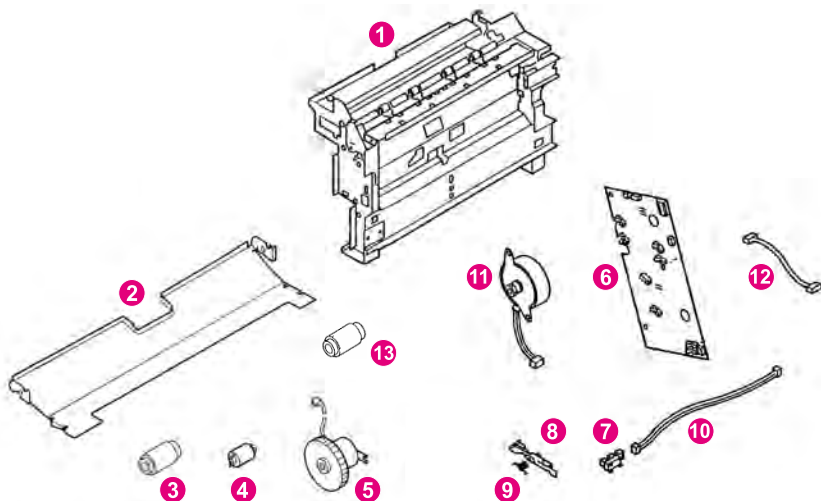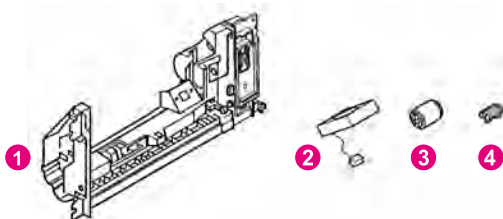
Figure 8-7   Detail of Assemblies

Table 8-7. Detail of Assemblies

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
A1	**Feeder Assembly**	**RG5-4305-000CN**		
A2	Block, Shaft Holding, Front	RB2-3503-000CN		1
A3	Compression Spring, Front	RS6-2072-000CN		1
A4	Sensor Cable	RG5-1843-000CN		1
A5	Sensor Arm PS1	RB1-6417-000CN		1
A6	Sensor Arm Spring	RB1-6409-000CN		1
A7	Compression Spring, Rear	RS6-2073-000CN		1
A8	Block, Shaft Holding, Rear	RB2-3504-000CN		1
B1	**Assembly, Paper Pickup**	**RG5-4334-000CN**		**1**
B2	Plate, Guide-Upper	RB1-6582-000CN		
B3	Roller, Pickup	RF5-2708-000CN		
B4	Limiter, torque	RB2-3851-000CN		2
B5	Clutch, Paper Feed	RH7-5188-000CN		1
B6	PCA, PIU	RG5-1860-000CN		1
B7	Photo Interrupter	WG8-0291-000CN		1
B8	Arm, Sensor-PS2	RB1-6557-000CN		1
B9	Spring, Sensor Arm	RB1-6558-000CN		1
B10	Cable, Sensor	RG5-1859-000CN		1
B11	Motor, PIU	RH7-1350-000CN		1
B12	Cable, Paper Pickup	RG5-1861-000CN		1
B13	Feed and Separation Rollers	RF5-1834-000CN		4
C1	**Assembly, Tray 1**	**RG5-4330-000CN**		**1**
C2	Fan, FM5	RH7-1397-000CN		
C3	Tray1 Feed Roller	RB1-9526-000CN		1
C4	Tray 1 Separation Pad	RF5-2703-000CN		1
D1	**Delivery Assembly**	**RG5-1874-000CN**		**1**
D3	Fan, FM4/Delivery Assembly	RH7-1289-000CN		1
D5	Paper Height Lever	RB1-6693-000CN		1
D6	Paper Sensing Lever	RB1-6692-000CN		1
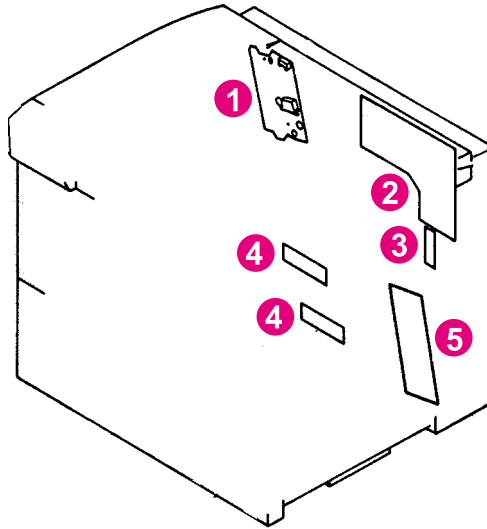
Figure 8-8   **PCB Assembly Location Diagram**

Table 8-8. PCB Assembly Locations

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	PCB, Switch/Sensor	RG5-1846-000CN		1
2	Assembly, DC Controller PCB	RG5-4375-030CN		1
2	Assembly, DC Controller PCB (exchange)	C4214-69009 (ex.)		1
3	PCB, Tray, Multi-purpose	RG5-1884-000CN		1
4	PCB, Tray Sensor	RG5-1845-000CN		2
5	Paper P/U PCB	RG5-1860-000CN		1
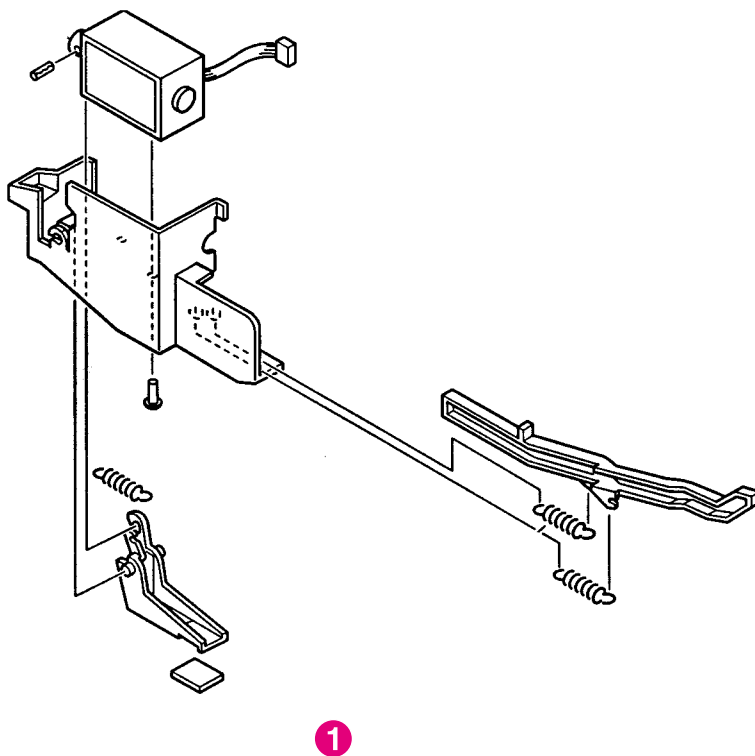
Figure 8-9 **Face-up Solenoid Assembly**

Table 8-9. Face-up Solenoid Assembly

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Face-up Solenoid Assembly	RG5-1875-000CN		1

Paper-Handling Devices Parts and Diagrams

Input Devices

2000-sheet Input Tray
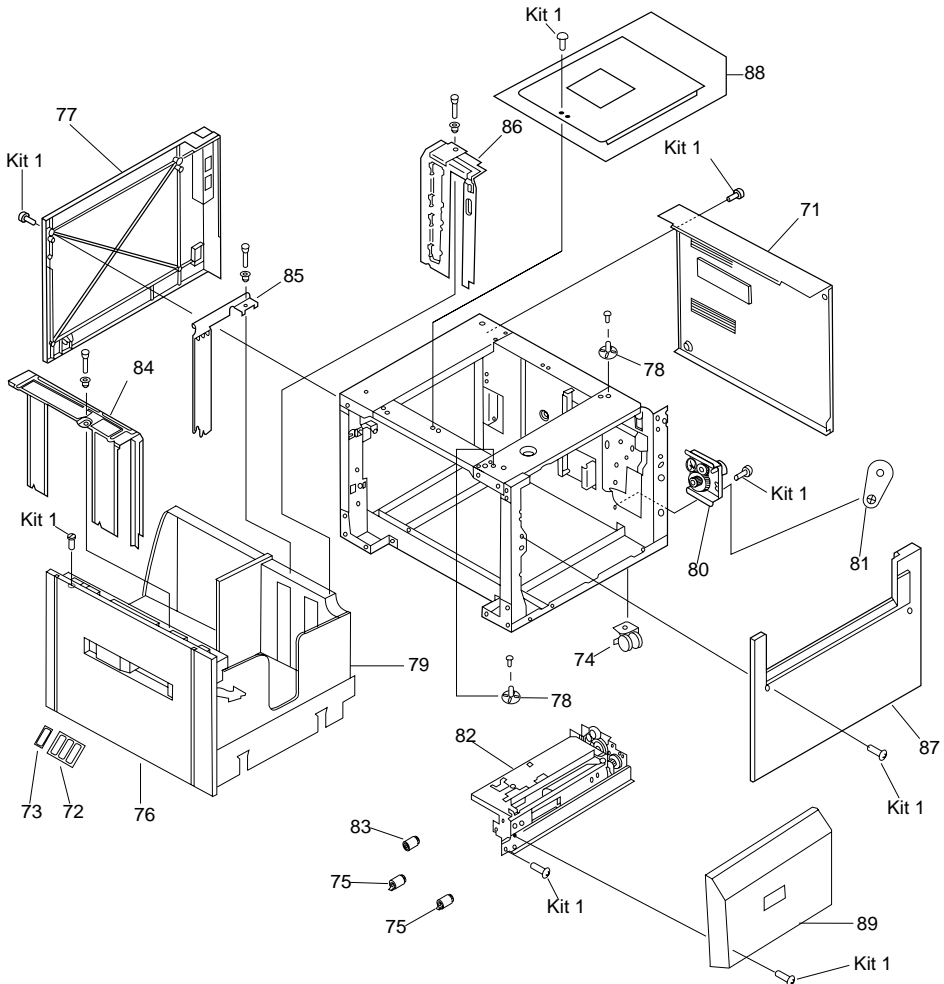
Figure 8-10   2000-sheet Input Tray Components (1 of 2)

Table 8-10. 2000-sheet Input Tray Components (1 of 2)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
71	Back Cover	RB2-2519-000CN		1
72	Tray Size Labels	RS5-8611-000CN		1
73	Tray Size Plate	RB1-6894-000CN		1
74	Caster	XZ9-0442-000CN		4
75	Feed and Separation Rollers	RF5-1834-000CN		2
76	Front Cover (with LED window)	RF5-2568-000CN		1
77	Left Cover	RF5-2646-000CN		1
78	Locating Pin, Metal (Positioning)	RF5-2556-000CN		3
79	2000-sheet Input Tray Paper Tray	RG5-3845-000CN		1
80	Paper Deck Drive Assembly	RG5-3851-000CN		1
81	Paper Deck Drive Bushing	RS5-1399-000CN		1
82	Paper Pickup Assembly	RG5-3843-000CN		1
83	Pickup Roller	RF5-1835-000CN		1
84	Plate Paper Limit Back	RG5-3850-000CN		1
85	Plate Paper Limit Middle	RG5-3849-000CN		1
86	Plate Paper Reference Front	RG5-4201-000CN		1
87	Right Cover	RB1-7832-020CN		1
88	Top Cover (Label Included)	RG5-2644-000CN		1
89	Vertical Transfer Unit (VTU)	RG5-3854-000CN		1
Kit 1	Hardware Kit	RY7-5044-000CN		1
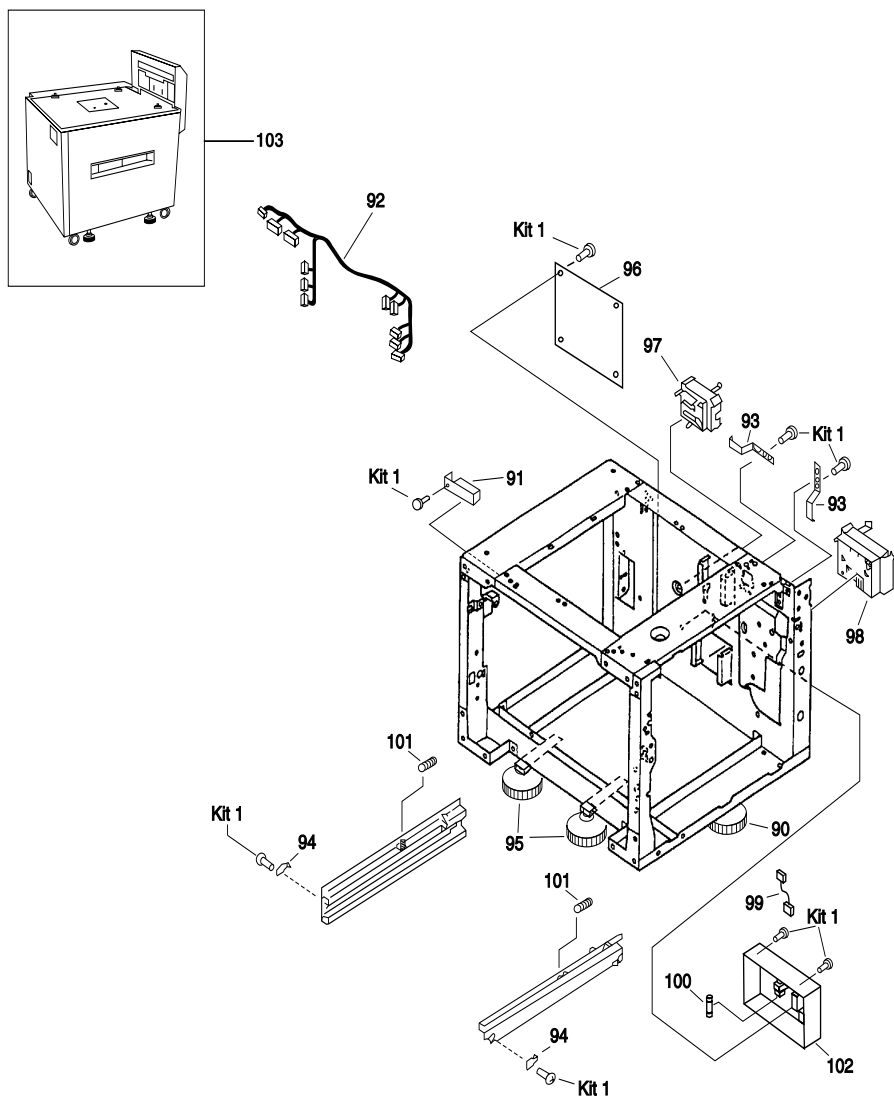
Figure 8-11 **2000-sheet Input Tray Components (2 of 2)**

Table 8-11. 2000-sheet Input Tray Components (2 of 2)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
90	Feet Adjustable Tip	RG5-3853-000CN		1
91	Front LED PCA with holder and cable	RG5-4204-000CN		1
92	Main Cable	RG5-3919-000CN		1
93	Metal retaining spring (Spring Leaf)	RB1-7835-000CN		1
94	Metallic Retaining Tab (Plate Stop)	RB1-7677-000CN		1
95	Outrigger	RG5-3852-000CN		1
96	Paper Deck PCA (2000-sheet Input Tray Controller)	RG5-3908-000CN		1
97	Paper Quantity Sensor PCA Assembly	RG5-2166-000CN		1
98	Paper Size Sensor PCA Assembly	RG5-2168-000CN		1
99	Power Supply Cable (PSU)	RG5-3909-000CN		1
100	Power Supply Fuse 250V/3.15A	VD7-1893-151CN		1
101	Tension Spring	RS5-2561-000CN		1
102	Universal Power Supply Assembly	RG5-4021-000CN		1
103	2000-sheet Input Tray (whole unit)	R95-3002-000CN		1
Kit 1	2K (2000-sheet Input Tray) Deck Hardware Kit	RY7-5044-000CN		1
Not Shown	Jumper Cable, Long	C4781-60502		1
Not Shown	Jumper Cable, Short	C4781-60501		1
Not Shown	Power Box (includes bracket clip)	C4781-60500		1
Not Shown	Tray Shipping Lock	RB1-7746-000CN		1
Not Shown	C-link Cable (engine to input device)	C3763-60502		1
Not Shown	Clutch cover for 2000-sheet input tray	RB2-2509-000CN		1

2 x 500-sheet Input Tray
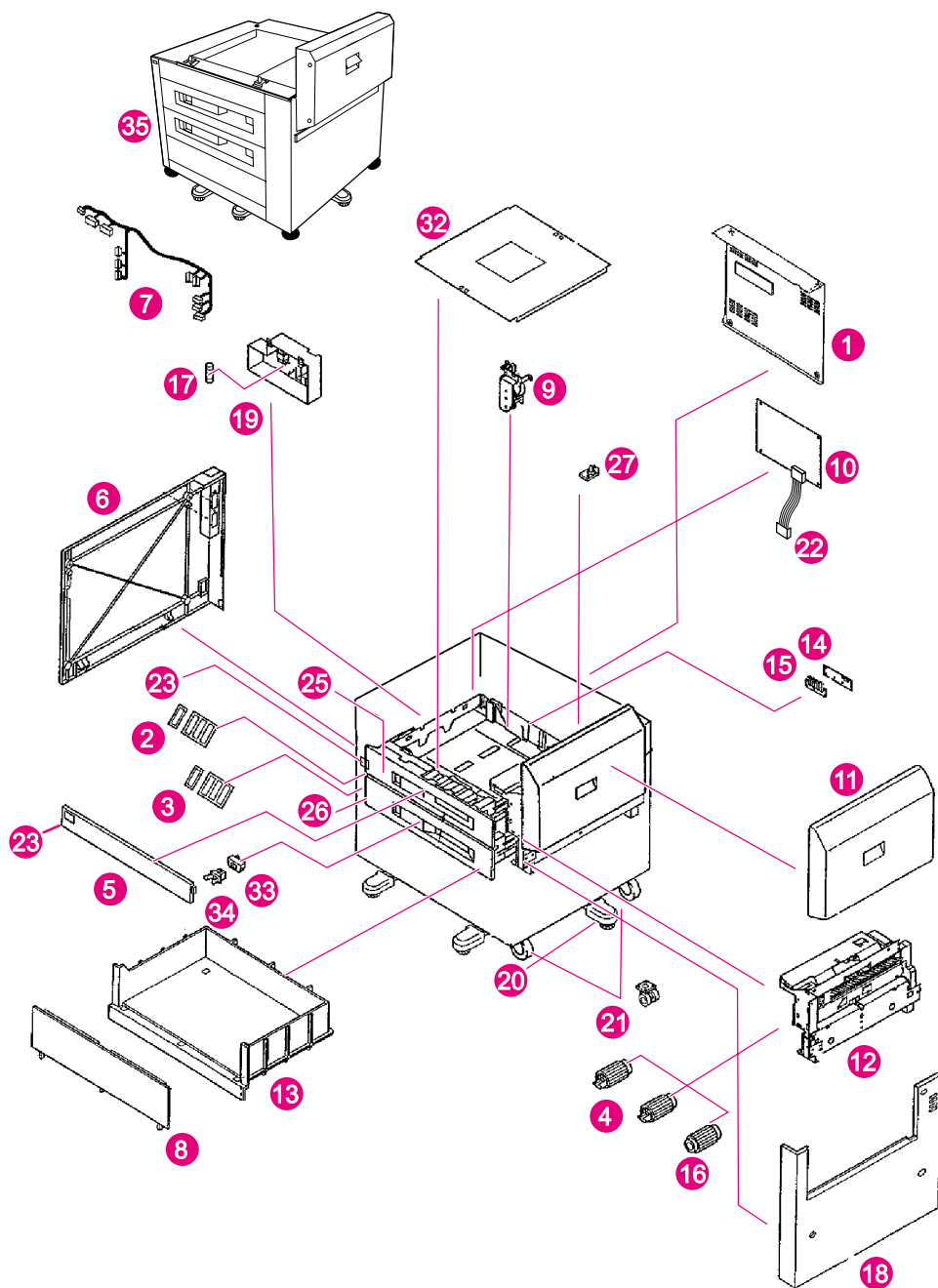
Figure 8-12 **2 x 500-sheet Input Tray Internal Components**

Table 8-12. 2 x 500-sheet Input Tray Internal Components

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Back Cover	RB2-3675-000CN		1
2	Tray Size Labels	RS5-8611-000CN		1
3	Tray Size Plate	RB1-6894-000CN		1
4	Feed and Separation Rollers	RF5-1834-000CN		4
5	Front Top Cover	RF5-2762-000CN		1
6	Left Cover	RF5-2764-000CN		1
7	Main Cable	RG5-4440-000CN		1
8	Front Door (Cover Storage Tray)	RB2-3668-000CN		1
9	Paper Deck Drive Assembly	RG5-4416-000CN		1
10	2 x 500-sheet Input Tray Controller PCA	RG5-4442-000CN		1
11	Paper Feed Assembly (Vertical Transfer Unit)	RG5-4403-000CN		1
12	Paper Pickup Assembly	RG5-4410-000CN		1
13	Storage Paper Tray	RB2-3669-000CN		1
14	Tray-Size Sensing PCA	RG5-1845-000CN		1
15	Holder Size PCA	RB2-3667-000CN		1
16	Pickup Roller	RF5-2708-000CN		1
17	Power Supply Fuse 250V/3.15A	VD7-1893-151CN		1
18	Right Cover	RB2-3666-000CN		1
19	Universal Power Supply Assembly	RG5-4021-000CN		1
20	Outrigger	RG5-4205-000CN		1
21	Caster	XZ9-0442-000CN		1
22	Power Supply Cable (PSU)	RG5-3909-000CN		1
23	Front LED PCA	RG5-4441-000CN		1
25	Tray 4 Assembly	R98-1007-000CN		1
26	Tray 5 Assembly	R98-1006-000CN		1
27	Locating Pin, Metal (Positioning)	RF5-2556-000CN		1
not shown	Power Box (Includes bracket clip)	C4781-60500		1
not shown	Jumper Cable, Short	C4781-60501		1
not shown	Jumper Cable, Long	C4781-60502		1

Table 8-12. 2 x 500-sheet Input Tray Internal Components (continued)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
not shown	Feet Adjustable Tip	RG5-3853-000CN		1
not shown	Clutch cover for 2 x 500-sheet input tray	RB2-3690-000CN		1
32	Top Cover (Includes label)	RF5-2766-000CN		1
33	Spacer, latch	RB2-3705-000CN		1
34	Latch	XZ9-0379-000CN		1
35	2 x 500-sheet Input Tray (whole unit)	R95-3003-000CN		1

Note All screws are included in the Screws Kit, and all shipping locks are included in the Shipping Locks Kit.

Output Devices

7-bin Tabletop Mailbox
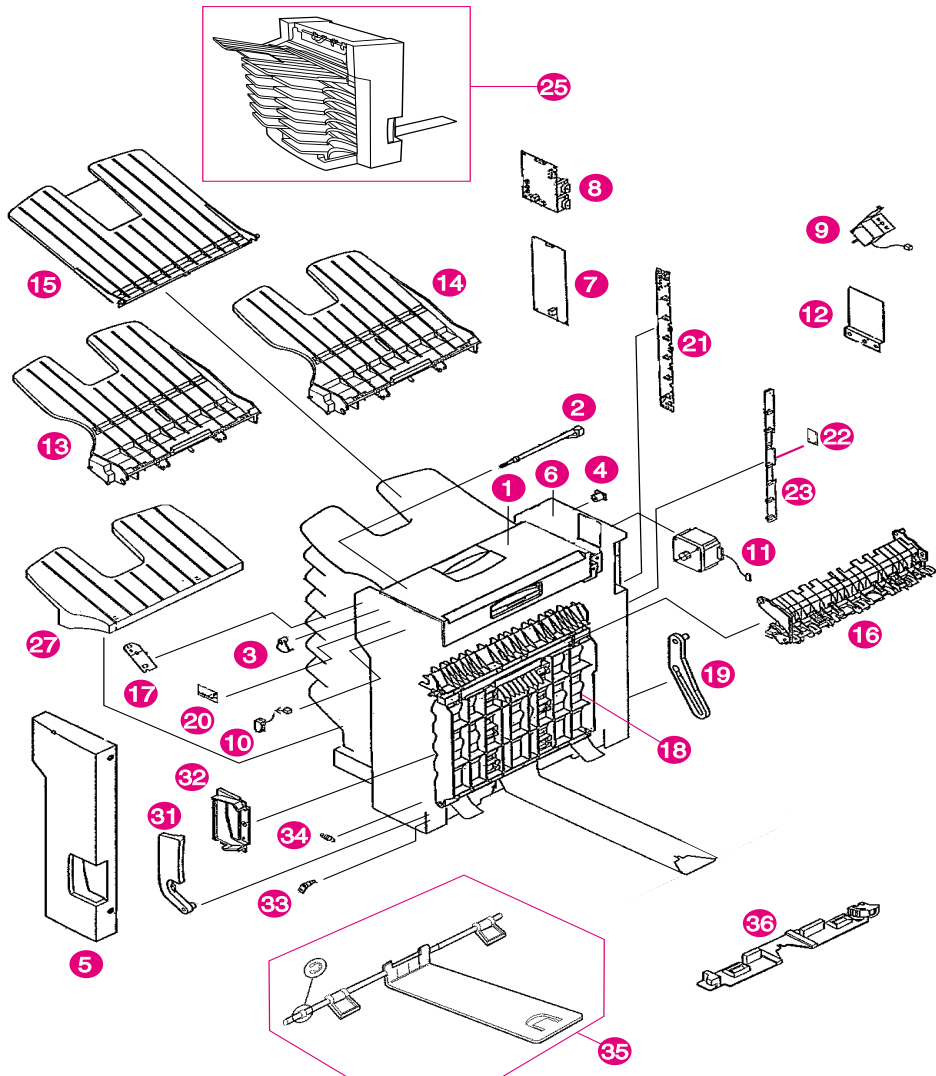
Figure 8-13　**7-bin Tabletop Mailbox Internal Components**

Table 8-13. 7-bin Tabletop Mailbox Internal Components

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
1	Top Cover Assembly (Upper Guide)	RG1-3838-000CN		1
2	Bin Full Sensor	RA2-2484-000CN		1
3	Flag, Sensor	RA2-2485-000CN		1
4	Bushing	RA2-2505-000CN		1
5	Front Cover	RF1-4004-000CN		1
6	Back Cover	RF1-4008-000CN		1
7	Power Supply	RH3-2205-000CN	C4783-69507	1
8	7-bin Tabletop Mailbox Controller PCA Assembly	RG1-3853-000CN		1
9	Solenoid Reversing Mechanism	RH7-5223-000CN		1
10	Solenoid Flipper	RH7-5225-000CN		1
11	Reversing Mechanism Motor	RF1-4003-000CN		1
12	Plate (Motor Cover)	RA2-2541-000CN		1
13	Face-down Bin Assembly, Odd (with 1 roller)	RG1-3836-000CN		1
14	Face-down Bin Assembly, Even (with 2 rollers)	RG1-3837-000CN		1
15	Reversing Tray (Face-up)	RA2-2487-000CN		1
16	Diverter Assembly (Flipper)	RG1-3844-000CN		1
17	Face-up Bin Full and Sensor PCA	RG1-3816-000CN		1
18	Right Cover Assembly	RG1-3840-000CN		1
19	Plate, Stopper	RA2-2527-000CN		1
20	LED PCA	RG1-3817-000CN		1
21	Empty Bin Sensor PCA	RG1-3815-000CN		1
22	Support Plate	RA2-2500-000CN		1
23	Full Bin and Interlock sensor PCA	RG1-3814-000CN		1
not shown	C-link Cable (80 cm)	C4783-70000		1
25	7-bin Tabletop Mailbox, whole unit	R95-3007-000CN		1
not shown	7-bin Tabletop Mailbox, Stand Assembly	C4784-60500		1
27	Bottom Bin (Tray)	RA2-2408-000CN		1
31	Handle Latch	RA2-2512-000CN		1
32	Cover Latch	RA2-2531-000CN		1

Table 8-13. 7-bin Tabletop Mailbox Internal Components (continued)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
33	Pin Positioning Bushing	RA2-2439-000CN		1
34	Spring Tension	RA2-2513-000CN		1
35	Rail Assembly	RG1-3842-000CN		1
36	Latching Mechanism	RF1-4005-000CN		1
not shown	Hardware Screws Kit for 7-bin Tabletop Mailbox	RY7-5048-000CN		1

Note   All screws are included in the Screws Kit.

8-bin Mailbox

Figure 8-14 **8-bin Mailbox Components (1 of 3)**

Table 8-14. 8-bin Mailbox Components (1 of 3)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
20	User LED PCA (with Cable)	C4785-60515		1
21	Adjustable Fixed Caster	C4785-60511		1
22	Attachment Assembly (Rod, Bracket, Cables)	C4785-60516		1
23	Blind Cover	C4785-60503		1
24	Standard Output Bin	C4785-60502		1
25	Face-up Bin	C3764-60505		1
26	Front Cover	C4785-60504		1
27	8-bin Mailbox Assembly without attachment rod (Exchange Unit)	C4785-69500 (ex.)		1
28	8-bin Mailbox Assembly with attachment rod (Whole Unit)	C4785-60500		1
29	8-bin Mailbox Controller (with metal box)	C4785-60508		1
30	Nonadjustable Fixed Caster	C4785-60510		1
31	Top Cover	C3764-60555		1
32	Stapler Assembly (Exchange Unit)	C4787-69500 (ex.)		1
33	Stapler Assembly	C4787-60500		1
34	5-bin Mailbox - for Stapler	C4787-60502		1
35	5-bin Mailbox - for Stapler Assembly (Exchange Unit)	C4787-69502 (ex.)		1
Kit 1	**Plastic Parts**	C4785-60519		1
Kit 1/ 1G	Spacer, Plastic	(included in Kit 1)		
Kit 3	**Hardware**	C4785-60521		1
Kit 3/ 3B	Screws Torx, T20, M4X10	(included in Kit 3)		
Kit 3/ 3C	Screws Torx, Tapping T20, M4X10	(included in Kit 3)		
Kit 3/ 3E	Screw Torx, Tapping T10	(included in Kit 3)		

Figure 8-15 **8-bin Mailbox Components (2 of 3)**

Table 8-15. 8-bin Mailbox Components (2 of 3)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
32	Flipper Assembly	C4785-60509		1
33	Head Assembly (with Metal Tape)	C4785-60506		1
34	Metal Tape and Housing Assembly	C4785-60507		1
Kit 1	**Plastic Parts**	C4785-60519		1
Kit 1/ 1A	Anticurl String			
Kit 1/ 1B	Anticurl Spring			
Kit 1/ 1C	Pulley, Small Bottom			
Kit 3	**Hardware**	C4785-60521		1
Kit 3/ 3D	Screws Torx, T20, M4x12			
Kit 3/ 3E	Screw Torx, Tapping T10			
Kit 3/ 3F	Caster Screws			
Not Shown	Repackaging Kit	C4785-60513		1
Not Shown	Short C-link Cable adapter (extension)[1]	C4785-70001		1
Not Shown	C-link Cable 5-bin 8-bin Mailbox to Stapler Unit	C3766-60539		1

1. The extension is necessary when no input device is used in combination with an 8-bin mailbox or a 5-bin mailbox with stapler.
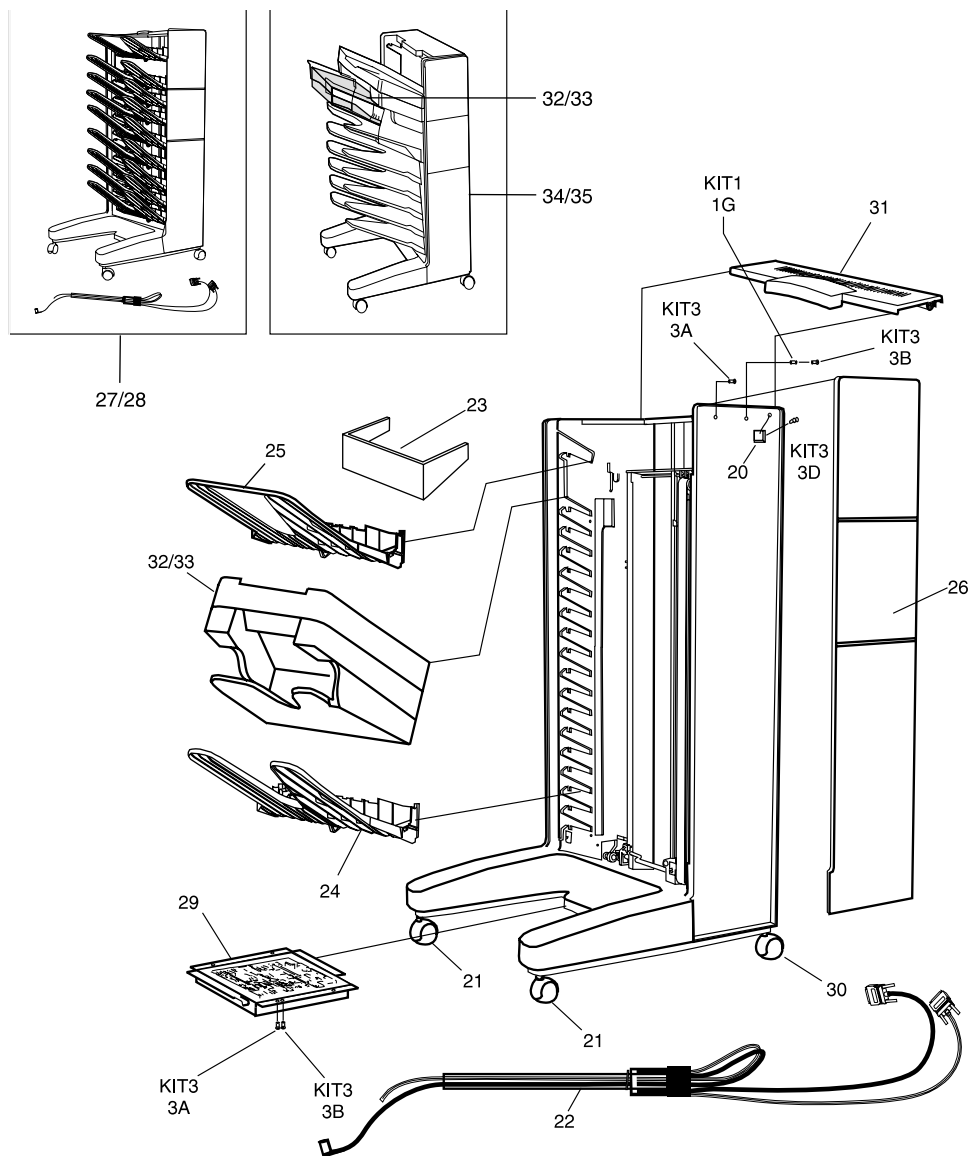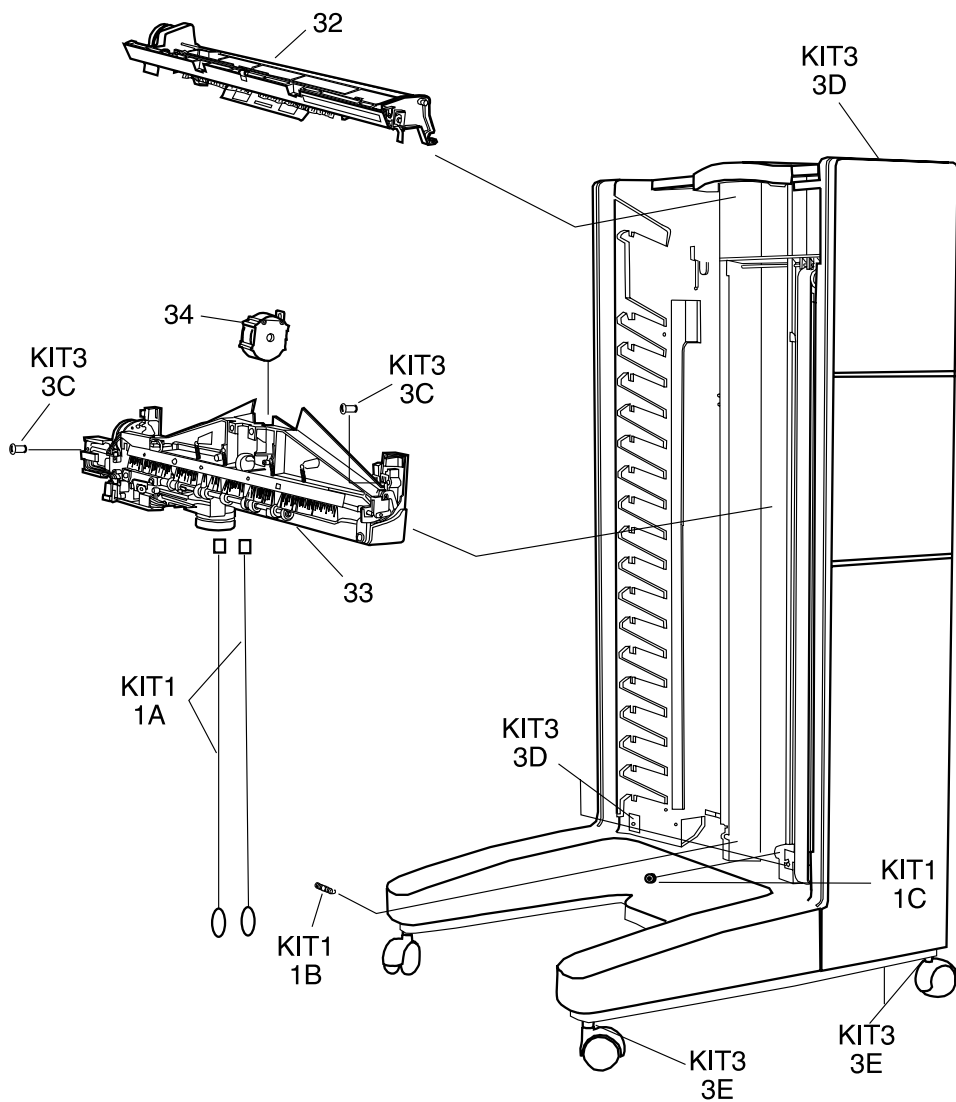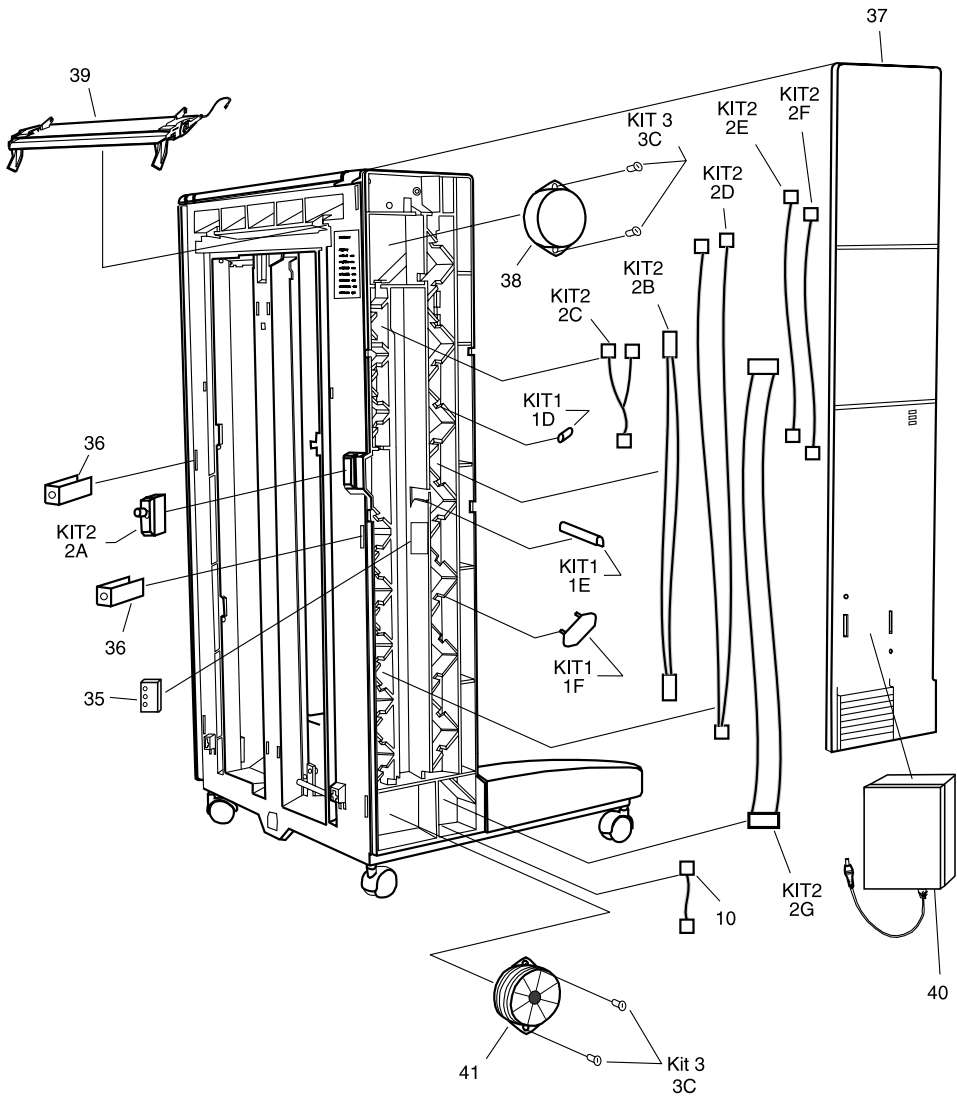
Figure 8-16 **8-bin Mailbox Components (3 of 3)**

Table 8-16. 8-bin Mailbox Components (3 of 3)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
35	3 Diagnostic LED PCA (with Cable)	C4785-60514		1
36	Attachment Clip	C4785-60512		1
37	Back Cover	C4785-60505		1
38	Delivery Head Position Motor	C3764-60507		1
39	Input Paper Guide (Nose Piece)	C3764-60561		1
40	Power Supply	C4785-60501		1
41	Transport Belt Motor (with Fan)	C4785-60518		1
Kit 1	**Plastic Parts**	C4785-60519		1
Kit 1/1D	Cable Holder Round Gasket			
Kit 1/1E	Flat Cable holder Edge			
Kit 1/1F	Flat Cable Holder			
Kit 2	**Cables**	C4785-60520		1
Kit 2/2A	Interlock Switch			
Kit 2/2B	Delivery Head Motor Cable			
Kit 2/2C	Flipper Sensors - Controller Cable			
Kit 2/2D	Flipper Encoder - Controller			
Kit 2/2E	Flipper Motor - Controller			
Kit 2/2AF	ESD Cable			
Kit 2/2G	Delivery Head Assembly Flat Cable			
Kit 3	**Hardware**	C4785-60521		1
Kit 3/3A	Screws Torx			
Not Shown	Shipping Lock Kit for 8-bin Mailbox/5-bin Mailbox with Stapler	C4787-60503		1

Stapler
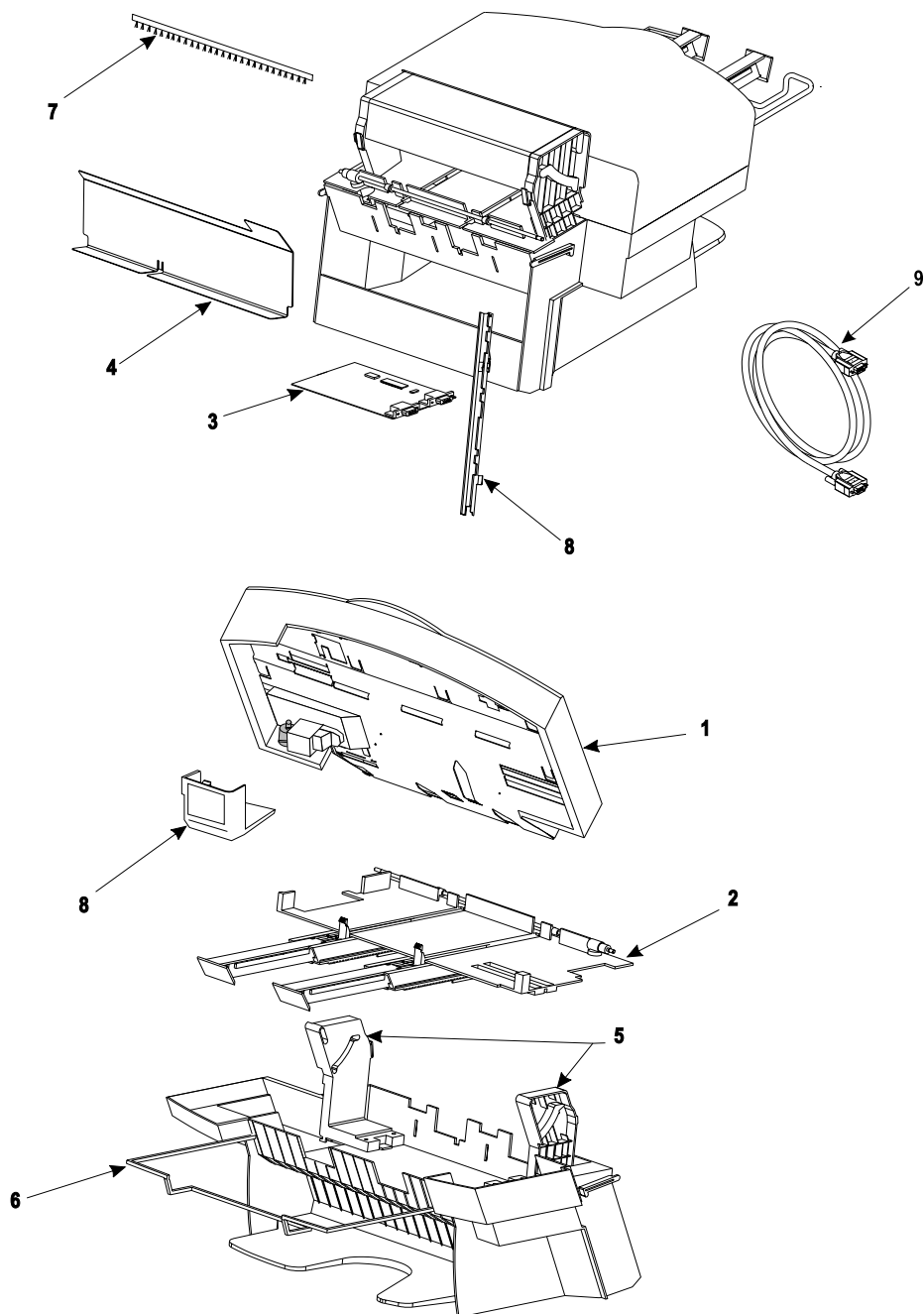
Table 8-17. Stapler Internal Components

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
	Stapler Assembly	C4787-60500		1
	Stapler Assembly (Exchange Unit)	C4787-69500 (ex.)		1
1	Top Cover Assembly	C3766-60501		1
2	Stapling Bed Assembly	C3766-60503		1
3	Stapler Control PCA	C4787-60501		1
4	Back Plate	C3766-60505		1
5	Hinges, Set of	C3766-60506		1
6	Wire Frame	C3766-60507		1
7	Brushes	C3766-60508		1
not shown	Stapler Packaging	C3766-60509		1
8	Kit: Plastic staple cover; scan bar (shown) bin full sensor, actuator, and flag (not shown)	C3766-60510		1
not shown	Kit: T10 Torx screws (10)	C3766-60511		1
9	C-link Cable (97 cm)	C3766-60512		1
not shown	Mailbox with Stapler Packaging	C3766-60516		1

HP Digital Copier Parts and Diagrams
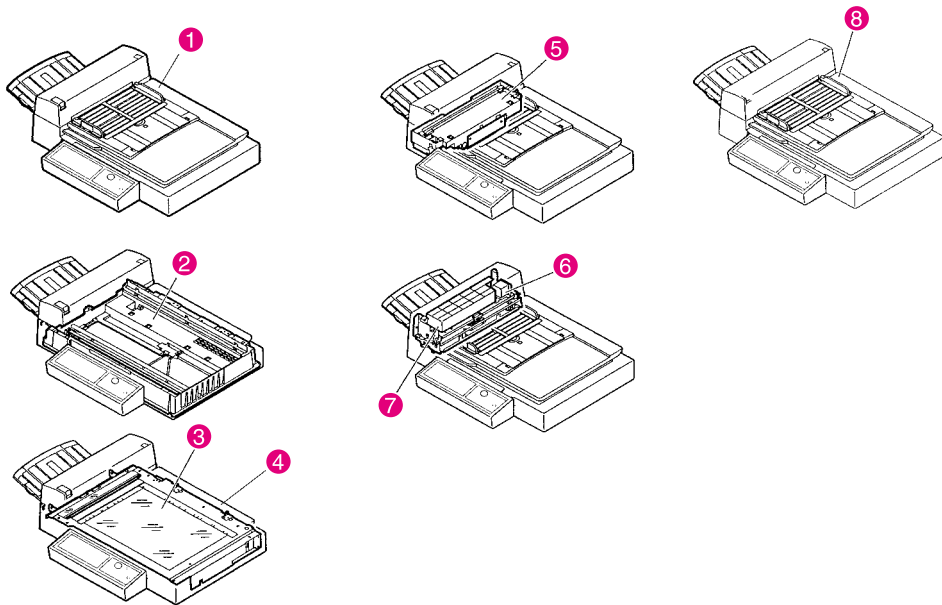
Figure 8-18   **Assembly Location Diagram**

1   Covers

2   Flatbed

3   Glass Plate Assembly

4   Power Supply and Main Board Tray

5   Carrier Unit

6   ADF Unit

7   Optical Unit

8   Document Cover Assembly
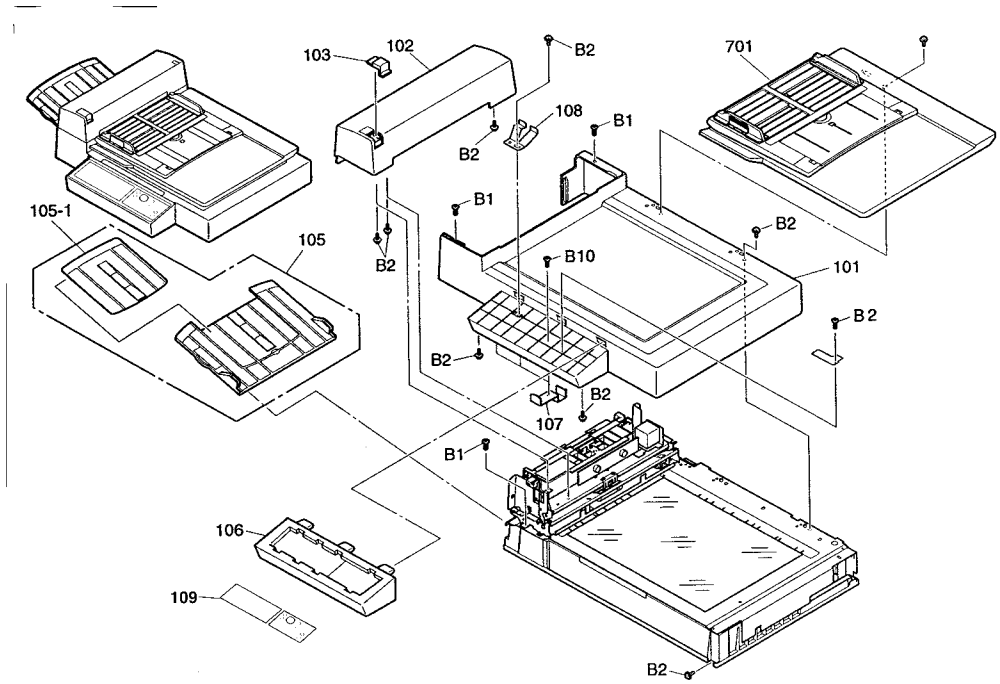
Figure 8-19   Covers

Table 8-18. Covers

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
101	Upper Cover (skin)	PA03002-C107FJ		1
102	ADF Cover (skin)	PA03002-C106FJ		1
103	ADF Latch Cap	PA03002-C201FJ		1
105	Output Tray Assembly	PA03002-C121FJ		1
105-1	Output Tray Flip-out	PA03002-C263FJ		1
106	Panel Cover	PA03002-C264FJ		1
107	Front Panel Bracket	PA03002-C257FJ		3
108	Front Panel Frame Ground Spring	PA03002-C266FJ		1
109	Front Panel	9000288TF		1
not shown	Front Panel Frame Ground Plate	PA03002-C272FJ		1
not shown	Front Panel Cable Clamp	PA03002-C273FJ		1
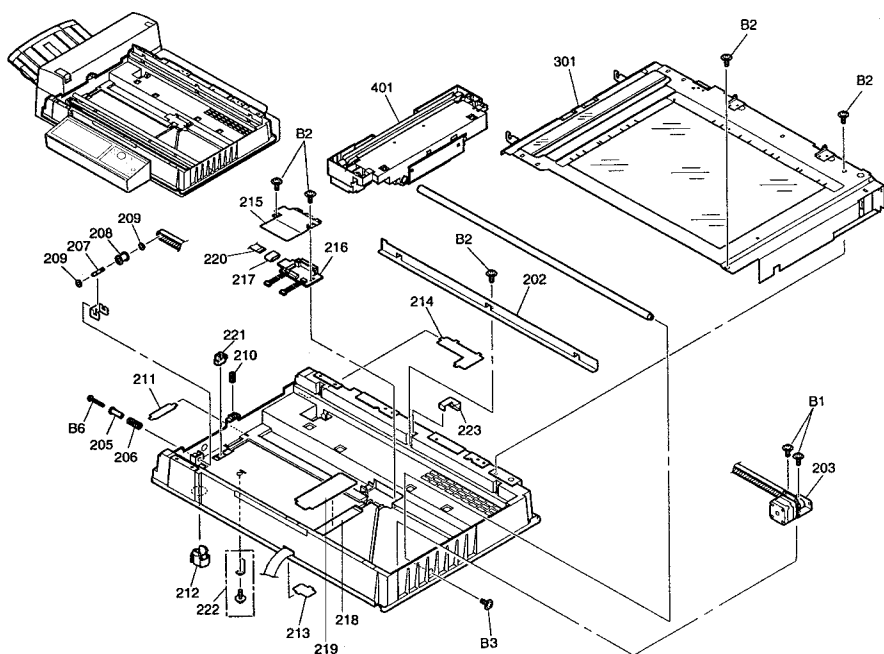
Figure 8-20   **Flatbed**

Table 8-19. Flatbed

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
202	Carrier Rail	PA03002-C205FJ		1
203	FB Motor Unit (w/belt)	PA03002-C116FJ		1
205	Carrier Tension Pulley Collar	PA03002-C214FJ		1
206	Carrier Tension Pulley Spring	PA03002-C212FJ		1
207	Carrier Tension Pulley Shaft	PA03002-C211FJ		1
208	Carrier Belt Tension Pulley	PA03002-C210FJ		1
209	Carrier Tension Pulley Spacer	PA03002-C213FJ		2
210	Idle Roller Coil Spring	PA03002-C209FJ		1
211	Carrier Unit Protector	PA03002-C216FJ		1
212	Rubber Foot	PA03002-C218FJ		4
213	Carrier Ribbon Cable Protector	PA03002-C217FJ		1
214	Control PCA Protector	PA03002-C215FJ		1

Table 8-19. Flatbed (continued)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
215	Junction PCA Cover	PA03002-C267FJ		1
216	Junction PCA	PA03002-C103FJ		1
217	Carrier Ribbon Cable Ferrite Bead	PA03002-C262FJ		1
218	Front Panel Cable	PA03002-C125FJ		1
219	Front Panel Cable Cover	PA03002-C270FJ		1
220	Carrier Flex Cable	PA03002-C204FJ		1
221	Home Position Sensor	PA03002-C207FJ		1
222	Carrier Stopper (shipping lock)	PA03002-C124FJ		1
223	Frame Ground Spring 1	PA03002-C208FJ		1
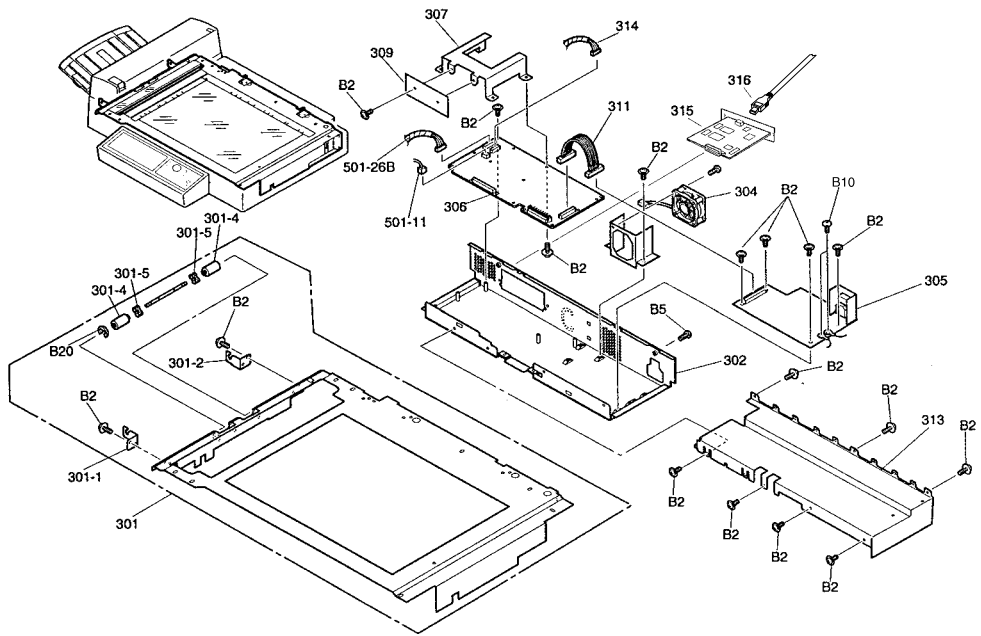
Figure 8-21   Glass Plate and PCA Assembly

Table 8-20. Glass Plate and PCA Assembly

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
301	Glass Plate Assembly	PA03002-C219FJ		1
301-1	Output Tray Bracket, Front	PA03002-C223FJ		1
301-2	Output Tray Bracket, Rear	PA03002-C222FJ		1
301-4	Exit Idle Roller	PA03002-C224FJ		2
301-5	HK Ring V2	PA03002-C225FJ		2
302	Main/PS Cover Bracket	PA03002-C220FJ		1
304	Fan Assembly	PA03002-C118FJ		1
305	Power Supply	PA03002-C101FJ		1
306	Control PCA (FJ)	PA03002-C102FJ		1
307	Copy Processor Card Cage	PA03002-C258FJ		1
309	Back PCA Board (CP mate)	PA03002-C119FJ		1
311	DC Cable PS to Main	PA03002-C203FJ		1
313	RFI Cover	PA03002-C202FJ		1

Table 8-20. Glass Plate and PCA Assembly (continued)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
314	CCD Cable	PA03002-C229FJ		1
315	Copy Processor Card	PM-3700		1
316	Copy Connect Cable	8120-8749		1
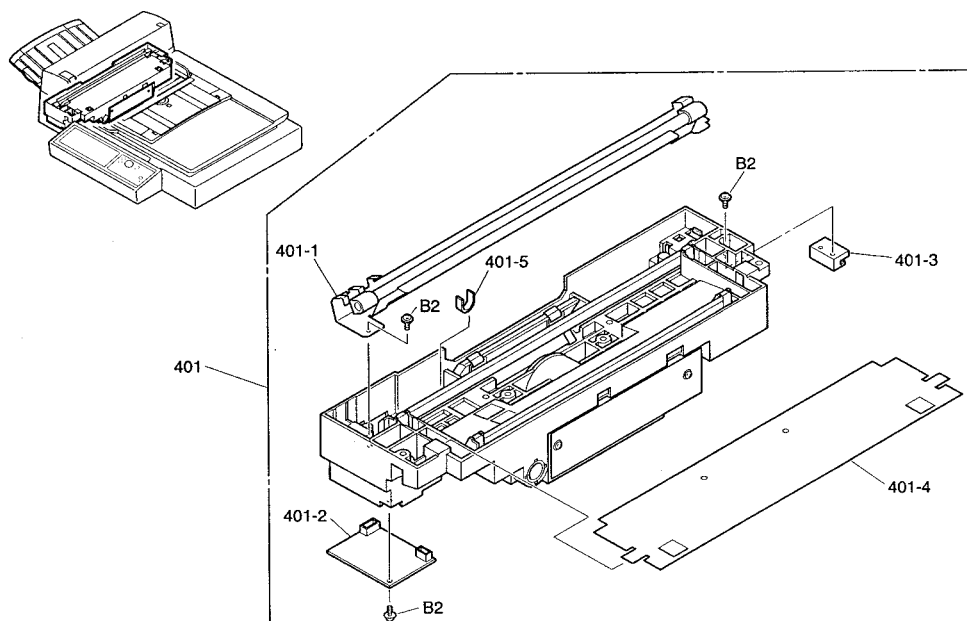
Figure 8-22   Carrier Unit

Table 8-21. Carrier Unit

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
401	Carrier Unit	PA03002-C113FJ		1
401-1	Lower Lamp (front side)	PA03002-C114FJ		1
401-2	Carrier Unit Lamp PCA	PA03002-C251FJ		1
401-3	Carrier Rail Bushing	PA03002-C206FJ		1
401-4	Carrier Unit Dust Cover	PA03002-C256FJ		1
401-5	Carrier Unit Lubrication Felt	PA03002-C259FJ		1
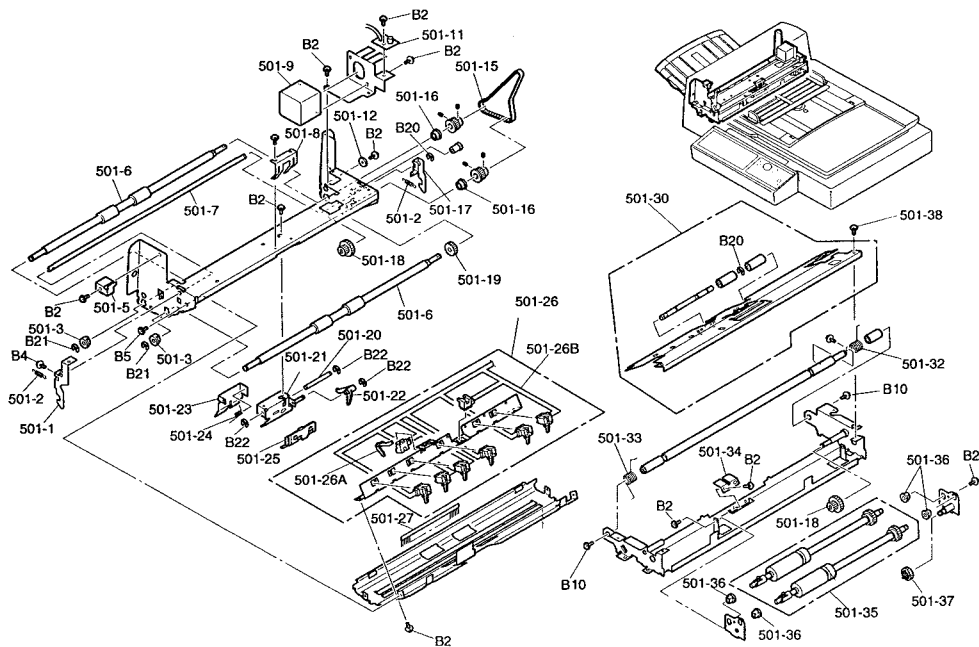
Figure 8-23   ADF Unit

Table 8-22. ADF Unit

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
501-1	ADF Latch Lever Front	PA03002-C242FJ		1
501-2	ADF Latch Spring	PA03002-C245FJ		2
501-3	Drive Roller Bearing	PA03002-C233FJ		2
501-5	Optical Unit Tie Down w/Pad	PA03002-C227FJ		1
501-6	Drive Roller Shaft	PA03002-C230FJ		2
501-7	ADF Latch Shaft	PA03002-C244FJ		1
501-8	Pick Spring	PA03002-C240FJ		1
501-9	ADF Motor Unit	PA03002-C109FJ		1
501-11	LED Assembly (includes cable)	PA03002-C126FJ		1
501-12	Key Washer	PA03002-C241FJ		1

Table 8-22. ADF Unit (continued)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
501-15	ADF Belt	PA03002-C111FJ		1
501-16	Bearing for Feed Roller	PA03002-C265FJ		2
501-17	ADF Latch Lever Rear	PA03002-C243FJ		1
501-18	Reduction Gear	PA03002-C232FJ		2
501-19	Drive Roller Gear	PA03002-C231FJ		1
501-20	Pad Shaft	PA03002-C238FJ		2
501-21	Pad Assembly Frame	PA03002-C236FJ		1
501-22	ADF Paper Empty Sensor Arm	PA03002-C235FJ		1
501-23	Pad Plate	PA03002-C239FJ		1
501-24	Pad Spring	PA03002-C237FJ		1
501-25	Separation Pad Assembly	PA03002-C122FJ		1
501-26	Sensor Unit Assembly	PA03002-C110FJ		1
501-26A	Top of Form Sensor Arm	PA03002-C234FJ		1
501-26B	ADF Cable	PA03002-C228FJ		1
501-27	Paper Anti Static Assembly	PA03002-C246FJ		1
501-30	Pick Roller Cover	PA03002-C112FJ		1
501-32	ADF Lift Spring Rear	PA03002-C248FJ		1
501-33	ADF Lift Spring Front	PA03002-C247FJ		1
501-34	Idle Roller Leaf Spring	PA03002-C249FJ		1
501-35	Pick Roller Assembly	PA03002-C120FJ		1

Table 8-22. ADF Unit (continued)

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
501-36	Brass Bushing for Pick Roller	PA03002-C269FJ		4
501-37	Pick Roller Clutch/Gear	PA03002-C250FJ		1
501-38	Thumb Screws (paper guide) (screws for Pick Roller Cover)	PA03002-C123FJ		2
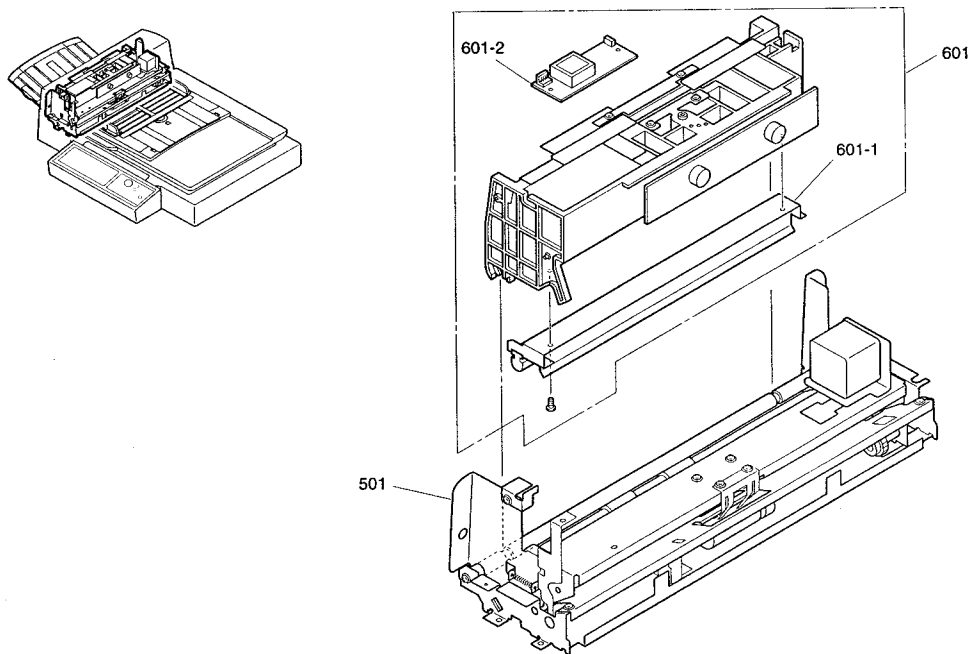
Figure 8-24 Optical Unit

Table 8-23. Optical Unit

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
501	ADF Unit	PA03002-C108FJ		1
601	Optical Unit	PA03002-C117FJ		1
601-1	Upper Lamp (back side)	PA03002-C115FJ		1
601-2	ADF Lamp PCA	PA03002-C252FJ		1
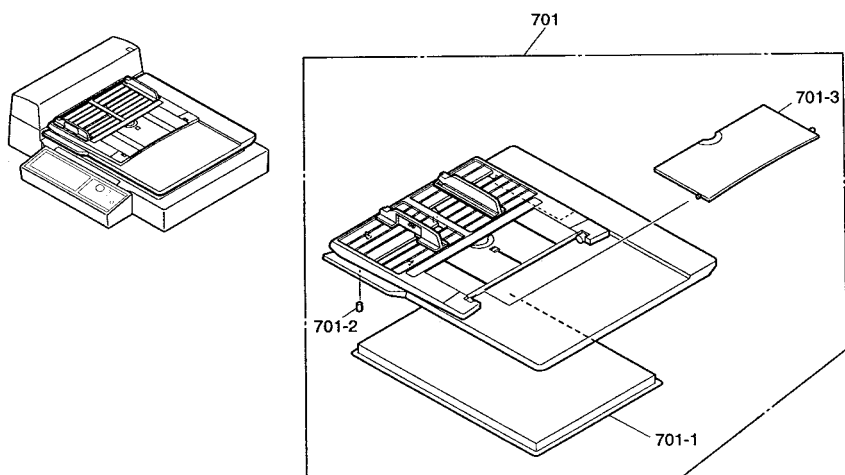
Figure 8-25 Document Cover Assembly

Table 8-24. Document Cover Assembly

Ref	Description	8100 Part No.	8150 Part No. (if different)	QTY
701	FB Cover Assembly	PA03002-C104FJ		1
701-1	Document Holding Pad	PA03002-C105FJ		1
701-2	Rubber Stop, Document Cover	PA03002-C226FJ		1
701-3	Paper Chute Flip Out	PA03002-C260FJ		1
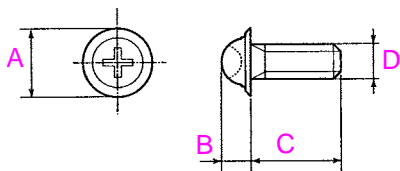
Figure 8-26 Screws (1 of 4)

Table 8-25. Screws (1 of 4)

Ref	A	B	C	D	Description	8100 and 8150 Part Number	Qty in kit
B1	8 mm	2.5 mm	8 mm	3 mm	TP Screw m3 x 8	PA03002-C282FJ	20
B2	8 mm	2.5 mm	6 mm	3 mm	TP Screw m3 x 6	PA03002-C281FJ	20
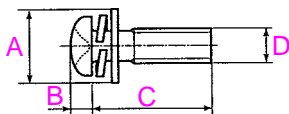
Figure 8-27 Screws (2 of 4)

Table 8-26. Screws (2 of 4)

Ref	A	B	C	D	Description	8100 and 8150 Part Number	Qty in kit
B3	10 mm	3.2 mm	8 mm	4 mm	TP Screw m4 x 8	PA03002-C288FJ	20
B4	7 mm	2 mm	6 mm	3 mm	Machine Screw w/ washer m3 x 6	PA03002-C283FJ	20
B5	7 mm	2 mm	8 mm	3 mm	Machine Screw w/ washer m3 x 8	PA03002-C284FJ	20
B6	7 mm	2 mm	35 mm	3 mm	Machine Screw w/ washer m3 x 35	PA03002-C285FJ	20
B10	9 mm	2.6 mm	8 mm	4 mm	Machine Screw w/ washer m4 x 8	PA03002-C286FJ	20
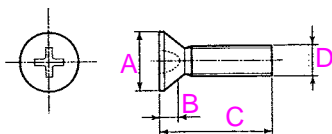
Figure 8-28   Screws (3 of 4)

Table 8-27. Screws (3 of 4)

Ref	A	B	C	D	Description	8100 and 8150 Part Number	Qty in kit
B15	6 mm	1.75 mm	6 mm	3 mm	Flat Head Screw m3 x6	PA03002-C287FJ	20
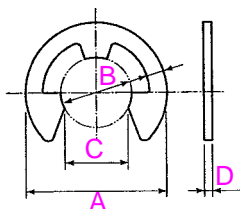
Figure 8-29   Screws (4 of 4)

Table 8-28. Screws (4 of 4)

Ref	A	B	C	D	Description	8100 and 8150 Part Number	Qty in kit
B20	7 mm	3 mm	2.6 mm	0.6 mm	E-ring, Latch Lever (20pcs)	PA03002-C254FJ	20
B21	9 mm	4 mm	3.5 mm	0.6 mm	E-ring, Idle Roller (20pcs)	PA03002-C253FJ	20
B22	5 mm	2 mm	1.7 mm	0.4 mm	Retainer Ring ADF Lock Bearing (20pcs)	PA03002-C255FJ	20
not shown					Thumb screws for Pick Roller Cover	PA03002-C123FJ	
not shown	13	5.5	10	4	Thumb screw for Document Cover	CA03002-C290	20

Alphabetical Parts List (Printer and Paper-handling Devices)

Table 8-29. Alphabetical Parts List – Printer and Paper-handling Devices

Description	Part Number	Table No. and Page
2 x 500-sheet Input Tray (Tray 4 and 5)/C4780A	R95-3003-000CN	table 8-1 on page 742 table 8-12 on page 763
2 x 500-sheet Input Tray Controller PCA	RG5-4442-000CN	table 8-12 on page 763
2000-sheet Input Tray (Tray 4)/C4781A	R95-3002-000CN	table 8-1 on page 742 table 8-11 on page 761
2000-sheet Input Tray Paper Tray	RG5-3845-000CN	table 8-10 on page 759
2K (2000-sheet Input Tray) Deck Hardware Kit	RY7-5044-000CN	table 8-11 on page 761
3 Diagnostic LED PCA (with Cable)	C4785-60514	table 8-16 on page 773
5-bin Mailbox - for Stapler	C4787-60502	table 8-14 on page 769
5-bin Mailbox - for Stapler Assembly (Exchange Unit)	C4787-69502 (ex.)	table 8-14 on page 769
5-bin Mailbox with Stapler/C4787A	C4787-69502 (ex.)	table 8-1 on page 742
5-bin Mailbox with Stapler/C4787A (8-bin Mailbox only, without the Stapler Unit.)	C4787-60502	table 8-1 on page 742
7-bin Tabletop Mailbox Controller PCA Assembly	RG1-3853-000CN	table 8-13 on page 766
7-bin Tabletop Mailbox, Stand Assembly	C4784-60500	table 8-13 on page 766
7-bin Tabletop Mailbox/C4783A	R95-3007-000CN	table 8-1 on page 742 table 8-13 on page 766
8-bin Mailbox/C4785A		table 8-1 on page 742
Adjustable Fixed Caster	C4785-60511	table 8-14 on page 769
Arm, Sensor-PS2	RB1-6557-000CN	table 8-7 on page 755
Arm-Pressure-front	RB1-6444-000CN	table 8-4 on page 749
Assembly, DC Controller PCB	RG5-4375-030CN	table 8-8 on page 756
Assembly, DC Controller PCB (exchange)	C4214-69009 (ex.)	table 8-8 on page 756
Assembly, Laser Scanner	RG5-4344-000CN	table 8-5 on page 751
Assembly, Laser Scanner (exchange)	C4214-69003 (ex.)	table 8-5 on page 751
Assembly, MP Tray (Tray 1)	RG5-4330-000CN	table 8-7 on page 755
Assembly, Paper Pickup	RG5-4334-000CN	table 8-7 on page 755
Assembly, Transfer Roller	RG9-1361-000CN	table 8-3 on page 747
Attachment Assembly (Rod, Bracket, Cables)	C4785-60516	table 8-14 on page 769

Table 8-29. Alphabetical Parts List – Printer and Paper-handling Devices

Description	Part Number	Table No. and Page
Attachment Clip	C4785-60512	table 8-16 on page 773
Back Cover, 8-bin Mailbox	C4785-60505	table 8-16 on page 773
Back Cover, 7-bin Tabletop Mailbox	RA2-2455-000CN	table 8-13 on page 766
Back Cover, 2000-sheet Input Tray	RB2-2519-000CN	table 8-10 on page 759
Back Cover, 2 x 500-sheet Input Tray	RB2-3675-000CN	table 8-12 on page 763
Back Plate	C3766-60505	table 8-17 on page 775
Bin Full Sensor	RA2-2484-000CN	table 8-13 on page 766
Blind Cover	C4785-60503	table 8-14 on page 769
Block, Shaft Holding, Front	RB2-3503-000CN	table 8-7 on page 755
Block, Shaft Holding, Rear	RB2-3504-000CN	table 8-7 on page 755
Bottom Bin (Tray)	RA2-2408-000CN	table 8-13 on page 766
Brushes	C3766-60508	table 8-17 on page 775
Bushing	RA2-2505-000CN	table 8-13 on page 766
C-link Cable (61 cm) (engine to input device)	C3763-60502	table 8-1 on page 742 table 8-11 on page 761
C-link Cable (80 cm)	C4783-70000	table 8-13 on page 766
C-link Cable (97 cm)	C3766-60512	table 8-17 on page 775
C-link Cable Assembly 97 cm (8-bin Mailbox to Stapler)	C3766-60539	table 8-1 on page 742 table 8-15 on page 771
Cable, Fan 3	RG5-1921-000CN	table 8-6 on page 753
Cable, Fuser 1	RG5-4381-000CN	table 8-6 on page 753
Cable, Fuser 2	RG5-1850-000CN	table 8-6 on page 753
Cable, Paper Pickup	RG5-1861-000CN	table 8-7 on page 755
Cable, Registration	RG5-1928-000CN	table 8-6 on page 753
Cable, Scanner Motor	RG5-4378-000CN	table 8-5 on page 751
Cable, Sensor	RG5-1859-000CN	table 8-7 on page 755
Cable, Tray Sensor	RG5-1920-000CN	table 8-4 on page 749
Cables	C4785-60520	table 8-16 on page 773
Caster	XZ9-0442-000CN	table 8-10 on page 759 table 8-12 on page 763
Clutch Cover	RB2-3631-000CN	table 8-3 on page 747
Clutch cover for 2 x 500-sheet input tray	RB2-3690-000CN	table 8-12 on page 763
Clutch cover for 2000-sheet input tray	RB2-2509-000CN	table 8-11 on page 761
Clutch, Paper Feed	RH7-5188-000CN	table 8-7 on page 755

Table 8-29. Alphabetical Parts List – Printer and Paper-handling Devices

Description	Part Number	Table No. and Page
Compression Spring, Front	RS6-2072-000CN	table 8-7 on page 755
Compression Spring, Rear	RS6-2073-000CN	table 8-7 on page 755
Cover Latch	RA2-2531-000CN	table 8-13 on page 766
Cover, Internal Tray	RB1-6749-000CN	table 8-3 on page 747
Cover, Left-Lower	RB1-6480-000CN	table 8-2 on page 745
Cover, Rear	RF5-1402-000CN	table 8-2 on page 745
Cover, Switch	RB1-6492-000CN	table 8-2 on page 745
Cover, Upper Right	RB1-6464-000CN	table 8-4 on page 749
Delivery Assembly	RG5-1874-000CN	table 8-7 on page 755
Delivery Cover (Left Side F/U)	RB2-3558-000CN	table 8-2 on page 745
Delivery Head Position Motor	C3764-60507	table 8-16 on page 773
Display, Control Panel	RG5-4384-000CN	table 8-2 on page 745
Diverter Assembly	RG5-4325-000CN	table 8-2 on page 745
Diverter Assembly (Flipper)	RG1-3844-000CN	table 8-13 on page 766
Diverter Drive Assembly	RF9-1249-000CN	table 8-2 on page 745
Duplexer/C4782A	C4782-60501 C4782-69501 (ex.)	table 8-1 on page 742
EIO Coverplate	5021-0349	table 8-1 on page 742
Electrical Cover (Rear by Formatter)	RB1-6489-000CN	table 8-2 on page 745
Electromagnetic Clutch	RH7-5187-000CN	table 8-3 on page 747
Empty Bin Sensor PCA	RG1-3815-000CN	table 8-13 on page 766
Envelope Feeder/C4242B	C3765-60501	table 8-1 on page 742
Face-down Bin Assembly, Even (with 2 rollers)	RG1-3837-000CN	table 8-13 on page 766
Face-down Bin Assembly, Odd (with 1 roller)	RG1-3836-000CN	table 8-13 on page 766
Face-down Delivery Assembly	RG5-1874-000CN	table 8-3 on page 747
Face-up Bin (8-bin Mailbox)	C3764-60505	table 8-3 on page 747
Face-up Bin (engine)	RB1-6491-000CN	table 8-1 on page 742
Face-up Bin Full and Sensor PCA	RG1-3816-000CN	table 8-13 on page 766
Face-up Solenoid Assembly	RG5-1875-000CN	table 8-9 on page 757
Fan, FM1/Laser Scanner	RH7-1396-000CN	table 8-6 on page 753
Fan, FM2/Low Voltage Power Supply	RH7-1266-000CN	table 8-5 on page 751
Fan, FM3/ Formatter	RH7-1271-000CN	table 8-6 on page 753
Fan, FM4/Delivery Assembly	RH7-1289-000CN	table 8-7 on page 755

Table 8-29. Alphabetical Parts List – Printer and Paper-handling Devices

Description	Part Number	Table No. and Page
Fan, FM5	RH7-1397-000CN	table 8-7 on page 755
Feed and Separation Rollers	RF5-1834-000CN	table 8-10 on page 759 table 8-12 on page 763
Feeder Assembly	RG5-4305-000CN	table 8-3 on page 747 Ttable 8-7 on page 755
Feet Adjustable Tip	RG5-3853-000CN	table 8-11 on page 761 table 8-12 on page 763
Flag, Sensor	RA2-2485-000CN	table 8-13 on page 766
Flipper Assembly	C4785-60509	table 8-15 on page 771
Foot	RB1-6421-000CN	table 8-4 on page 749
Formatter Assembly	C4107-67901	table 8-1 on page 742
Formatter Assembly, Exchange	C4107-69001 (ex.)	table 8-1 on page 742
Front Cover, 8-bin Mailbox	C4785-60504	table 8-14 on page 769
Front Cover, 7-bin Tabletop Mailbox	RF1-4004-000CN	table 8-13 on page 766
Front Cover, engine	RG5-4362-000CN	table 8-2 on page 745
Front Cover (Duplex Jam Removal)	RB2-3626-000CN	table 8-2 on page 745
Front Cover (with LED window)	RF5-2568-000CN	table 8-10 on page 759
Front Door (Cover Storage Tray)	RB2-3668-000CN	table 8-12 on page 763
Front LED PCA	RG5-4441-000CN	table 8-12 on page 763
Front LED PCA with holder and cable	RG5-4204-000CN	table 8-11 on page 761
Front Top Cover	RF5-2762-000CN	table 8-12 on page 763
Full Bin and Interlock sensor PCA	RG1-3814-000CN	table 8-13 on page 766
Fuser Lock Lever-Left	RB1-6616-020CN	table 8-3 on page 747
Fuser Lock Lever-Right	RB1-6615-020CN	table 8-3 on page 747
Fusing Assembly, 110V	RG5-4318-000CN	table 8-3 on page 747
Fusing Assembly, 220V	RG5-4317-000CN	table 8-3 on page 747
Fusing Assembly, 110V (ex.)	C4214-69007	table 8-3 on page 747
Fusing Assembly, 220V (ex.)	C4214-69008	table 8-3 on page 747
Gear, 20T	RA9-1127-000CN	table 8-2 on page 745
Guide, Front	RB2-3622-000CN	table 8-4 on page 749
Guide, Rail	RB1-6776-000CN	table 8-4 on page 749
Guide, Rear	RF5-2726-000CN	table 8-4 on page 749
Guide, Slide	RB1-6775-000CN	table 8-6 on page 753
Guides, Interface	RB1-6771-000CN	table 8-6 on page 753